

PUBLIC HEALTH REPORTS

VOL. 30

JUNE 4, 1915

No. 23

THE MIGRATORY HABITS OF RATS

WITH SPECIAL REFERENCE TO THE SPREAD OF PLAGUE.

By R. H. CREEL, Surgeon, United States Public Health Service.

In studying the spread of rodent plague in New Orleans it seemed very evident that the dissemination of the infection was due to rodent travel.

The diffusion of the rodent infection was progressive and fairly symmetrical in a fan-shaped zone, radiating for a distance of some 2 or 3 miles from the earlier foci near the river front.

It was further possible, from consideration of various epidemicologic data, to exclude extension by any other means.

In reviewing the literature both on plague and rats it does not appear that there have been made any carefully planned or thoroughly executed experiments on this subject of migration, which is of such practical importance, opinions as to rodent travel being based on hearsay evidence or casual observation. Some abortive attempts have been made along this line, but were not carried to any definite end.

The English writers in India allude to rodent migration as a speculative element in the spread of plague, but invariably dismiss the theory as of negligible importance,¹ infected fleas in clothing or merchandise being considered the chief mode of the transference of the infection.²

The Indian plague commission³ state: "We have observed nothing to show that rats are in the habit of migrating, e. g., from one quarter of the city (Bombay) to another."

The Cuban authorities hold to the same view in general and attribute the diffusion of plague in Habana to the transference of infected fleas in merchandise, excluding the probability of rodent migration except for short distances, i. e., from one house to the adjoining one.⁴

¹ Journal of Hygiene, Vol. VII (1907), p. 907.

² Journal of Hygiene, Vol. VII (1907), p. 886.

³ Journal of Hygiene, Vol. VII (1907), p. 947.

⁴ Guiteras, Juan. Sanidad y Beneficencia, Boletín Oficial, September, 1914, p. 316.

In order to obtain definite facts as to the travel of rats in and about a city a practical experiment was decided upon and put in force.

A number of live rats (species *Mus norvegicus*) were collected by the use of large cage traps, and after being carefully marked were liberated.

One hundred and seventy-nine rats (93 full grown and 86 half grown) were released in the central residential section of New Orleans. In this area were the usual number of corner groceries, stables, and miscellaneous food depots. In order to avoid any danger, through a possibly infected rat scattering infection, the experiment was deferred until the decline in rodent infection and the animals were carefully observed in the laboratory before liberation.

The manner of marking the rodents was considered important, for any conspicuous branding would make the rat a pariah to his species, probably resulting in an earlier death. By punching both ears with an ordinary tonsil punch, removing a small section from the center, the mark was hardly noticeable as under natural conditions the ears lie back against the body. The rats were all released on March 28, shortly after midnight. On the map the large letter A indicates the point of liberation. The smaller letters with numerical exponents indicate the location where each one was trapped according to the number of days intervening between release and capture.

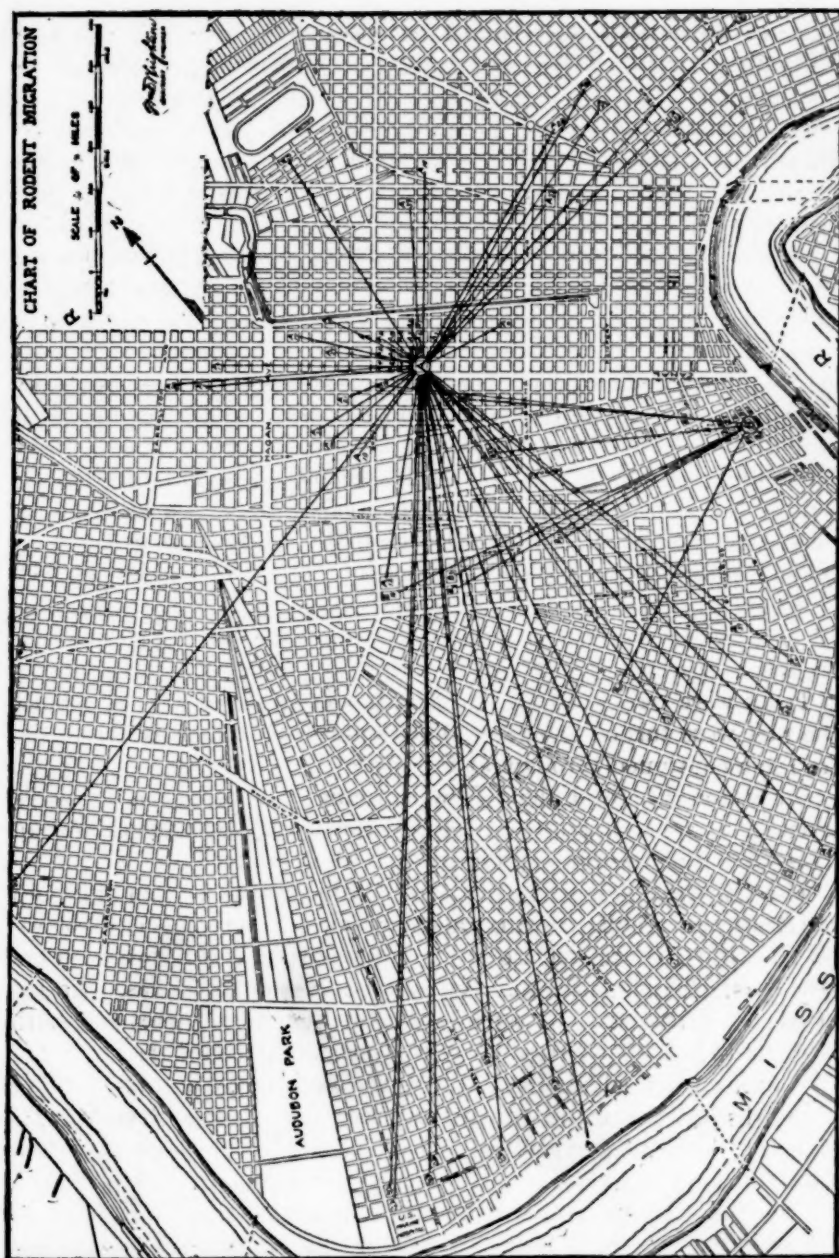
Traps were removed from the four blocks contiguous to site where the rats were turned loose for 10 days and then replaced. Intensive trapping continued throughout the rest of the city.

On March 28, 10 of the rats were found dead within a short distance of A. On the following day, 9 more dead rats were picked up. These had died from injuries incident to their captivity.

The first rat trapped at any considerable distance from the point of release was a half-grown norvegicus, taken some 19 blocks away—about 1 mile. From release to capture the time was between 48 and 60 hours. This rodent had not only traveled 19 blocks, but had crossed a main traveled avenue (Canal Street) 150 feet in width. The travel was above ground as there was no subsurface conduit.

Within two weeks a number of rats were retaken from points 4 miles distant from the site where they had been released. The distance actually traveled by these rodents must have been considerably greater than the air line on the map.

The first series of rats was liberated in a residential section of the city. Subsequently, on April 8, a second lot of 113 rats was released in the wholesale provision warehouse district (indicated on map by B) in order to determine whether or not the different character of



territory would result in any difference in migration. This second series was marked by punching the right ear and cropping the left one.

The section around B afforded fairly ample harborage in the way of wooden culverts, drains, and similar structures in the streets. In addition, there is a large quantity of foodstuffs, such as green vegetables, deposited in the gutters and streets each day.

With these conditions there was less incentive for the rats at site B to migrate than for those at site A, and the actual migration that resulted was in accord with this presumption.

Whereas 40 rats of the 160 from the first series (this number excluding the 19 found dead near point of liberation) made widespread excursions, only 8 from the second series (113) made any extensive travel.

The different opportunity for food and harborage between site A and site B was assumed to be sufficient reason for difference of migration.

The practical bearing of this study upon epidemiologic considerations of plague is very apparent. Had these rats at time of release been in the very earliest stage of the incubative period of plague there can be no doubt that their excursions would have been similar, though for shorter distances. That a spread of the epizootic would have resulted by a series of "relay" rodents seems only too probable.

Quite frequently in an infected community isolated cases of human and rodent plague are found well removed from any other known focus of infection. The irregular travel of rats sufficiently accounts for this and explains the broad stretches of presumably noninfected territory between foci. As early as 1906, Thompson in Australia noted this extension of infection "per saltum," but offered no explanation for the phenomena.

In the foregoing experiments there did not seem to be any abnormal condition that unduly influenced the movements of these rats.

A very considerable amount of rat proofing had been done in the city, but there was no lack of rodent harborage and food supply within a comparatively short distance; considerably more, however, around site B than site A.

The migratory habits of wild animals are well known in a general way, the phenomena being influenced by weather conditions, a local shortage in food supply, the appearance of an epizootic, or the presence of some natural enemy. Self-preservation presumably is the motive. All these factors apply to the movements of the semi-domesticated rat. Changes in harborage facility or food supply, the introduction of an epizootic, the appearance of a more powerful and

antagonistic animal, or a mating instinct, probably determine a migration.

Underlying it all, the rats may have some inexplicable instinct, a "wanderlust" that urges him on regardless of any other influencing factor.

The theory was advanced that the rats might have migrated as a result of a "homing" instinct. The circumstances of their capture, liberation, and recapture were not in harmony with such a hypothesis.

In furnishing the quota of the first series more than 60 rats were from the first and second sanitary districts and only 7 or 8 from the sixth district. In the recaptured number from the first series there were 12 from the sixth district (the area adjacent to Audubon Park on map) and 3 from the first and second districts, the section adjoining site A.

Had a "homing" instinct affected the migration of rats the proportion of rats recaptured in the sixth district to those in the first and second districts would have been as 1 to 9 instead of 4 to 1, as was actually the case. Again, in the fifth sanitary district, which is located to the eastward of site A, only 1 rodent was recaptured, although 35 rats of series A had been furnished from this district.

The disparity between the excursions of the first and second series also militates against any "homing" instinct theory.

It will also be noted that a large majority of the migratory rats of the first series traveled in a southerly direction, whereas the migration of the second series was almost entirely in a northwesterly and westerly direction. In traveling southward the rats of the first series had to cross two canals.

In addition to obtaining data on rodent migration the experiment furnished an index on the trapping efficiency of the service force; 103 of the 179 rats in the first series were recaptured during the following month and of the 113 in the second series 60 were recaptured in 26 days.

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Rodent migration in New Orleans—Date of rodent capture, time since release, and distance from place of liberation.

SERIES A.

Date of capture.	Duration of travel.	Number captured.	Distance traveled (air line).
Mar. 28.....	1 day.....	10	9 rats 1 block. 1 rat 3 blocks.
Mar. 29.....	2 days.....	12	10 rats 1 block. 1 rat 3 blocks. 1 rat 2 blocks.
Mar. 30.....	2½ days....	5	1 rat 1 mile. 3 rats 1 block. 1 rat 2 blocks.
Mar. 31.....	4 days.....	5	1 rat ¼ mile. 2 rats 1 block. 2 rats 2 blocks.
Apr. 2.....	6 days.....	1	1 rat 2 blocks.
Apr. 5.....	9 days.....	7	4 rats 2 blocks. 3 rats 1 block.
Apr. 6.....	10 days....	8	1 rat 1 mile. 1 rat ¼ mile. 4 rats 1 block. 2 rats 2 blocks.
Apr. 8.....	12 days....	5	1 rat ¾ miles. 1 rat 1 mile. 2 rats 1 block. 1 rat 2 blocks.
Apr. 9.....	13 days....	4	1 rat 1½ miles. 1 rat 2 miles. 1 rat 1 block.
Apr. 10.....	14 days....	6	1 rat ¾ miles. 2 rats ¼ mile. 1 rat ¾ mile. 1 rat 1 block. 1 rat 2 blocks. 1 rat 3 miles.
Apr. 11.....	15 days....	1	1 rat 1 block.
Apr. 12.....	16 days....	3	1 rat ¾ miles. 1 rat ¾ miles. 1 rat 1 block.
Apr. 13.....	17 days....	2	1 rat 1 mile. 1 rat 4 miles.
Apr. 14.....	18 days....	1	1 rat ¼ mile.
Apr. 16.....	20 days....	2	1 rat 1 block. 1 rat 2½ miles.
Apr. 17.....	21 days....	2	1 rat 2 blocks. 1 rat ½ mile.
Apr. 20.....	24 days....	3	1 rat 1 block. 1 rat 2½ miles. 1 rat 2½ miles.
Apr. 21.....	25 days....	2	1 rat 2½ miles. 1 rat 2½ miles.
Apr. 23.....	27 days....	2	1 rat 4 miles. 1 rat ¾ miles.
Apr. 24.....	28 days....	2	1 rat 2½ miles. 1 rat 1½ miles.
Apr. 26.....	30 days....	2	1 rat 2½ miles. 1 rat 1½ miles.
Apr. 27.....	31 days....	3	2 rats ¼ mile. 1 rat 3 miles.
Apr. 28.....	32 days....	3	1 rat ¼ mile. 1 rat 2 blocks. 1 rat 2 blocks.
Apr. 29.....	33 days....	5	1 rat ¾ miles. 1 rat 1½ miles. 1 rat ¾ miles. 1 rat 3 miles.
Apr. 30.....	34 days....	1	1 rat 1½ miles.
May 3.....	37 days....	6	1 rat 3 miles. 1 rat 2 miles. 1 rat 1 mile. 1 rat 1½ miles. 1 rat ¾ miles. 1 rat ¼ mile. 1 rat ¼ mile.

Rodent migration in New Orleans—Date of rodent capture, time since release, and distance from place of liberation—Continued.

SERIES B.

Date of capture.	Duration of travel.	Number captured.	Distance traveled (air line).
Apr. 8.....	1 day.....	5	4 rats 1 block. 1 rat 2 blocks.
Apr. 9.....	2 days.....	6	4 rats 1 block. 2 rats 2 blocks.
Apr. 10.....	3 days.....	9	6 rats 1 block. 2 rats 2 blocks. 1 rat 1½ miles.
Apr. 9.....	2 days.....	2	1 rat 1 block. 1 rat 2 blocks.
Apr. 12.....	5 days.....	3	1 rat 2 blocks. 2 rats 3 blocks.
Apr. 14.....	7 days.....	6	3 rats 1 block. 2 rats 2 blocks. 1 rat 1½ miles.
Apr. 15.....	8 days.....	4	3 rats 2 blocks. 1 rat 1 block.
Apr. 16.....	9 days.....	3	2 rats 1 block. 1 rat 2 blocks.
Apr. 17.....	10 days.....	2	1 rat 1½ miles. 1 rat 1 block.
Apr. 19.....	12 days.....	3	1 rat 2 blocks. 1 rat 1 block. 1 rat 1½ miles.
Apr. 20.....	13 days.....	3	2 rats 1 block. 1 rat 3 blocks.
Apr. 21.....	14 days.....	1	1 rat 1 block.
Apr. 22.....	15 days.....	3	1 rat ½ mile. 1 rat 1½ miles. 1 rat 2 blocks.
Apr. 23.....	16 days.....	3	1 rat 2 blocks. 2 rats 1 block.
Apr. 24.....	17 days.....	2	2 rats 1 block.
Apr. 28.....	21 days.....	3	1 rat 1½ miles. 1 rat 1 mile. 1 rat 1 block.
Apr. 29.....	22 days.....	1	1 rat 1 block.
May 3.....	26 days.....	1	1 rat 1½ miles.

Acknowledgment is made to the entire service force engaged in plague eradication in New Orleans for their very hearty cooperation in carrying out these experiments.

TRACHOMA.

ITS PREVALENCE IN THE SCHOOLS OF TUSCALOOSA, ALA.

By R. A. HERRING, Passed Assistant Surgeon, United States Public Health Service.

The discovery of trachoma among the school children of the city of Tuscaloosa has recently brought this disease into prominence in that vicinity. The situation necessarily demanded prompt attention, but before systematic measures directed toward control and eradication were instituted it was deemed advisable that the situation be carefully examined by some one thoroughly familiar with the clinical manifestations of trachoma and having a practical knowledge of the public-health problems presented by this disease. To this end, under instructions from the Surgeon General United States Public Health Service, and after conference with the State health officer of

Alabama, and in cooperation with the health officer of the city of Tuscaloosa and Tuscaloosa County, an examination of the entire public school enrollment was begun on March 22, 1915.

Tuscaloosa, at the present time, has an estimated population of 12,000 and a school enrollment of about 1,250. During the survey, 1,122 pupils of the city public schools were examined for eye disease, and, in addition, 240 students of the State university and 900 inmates of the Alabama State Hospital for the Insane, both institutions located at Tuscaloosa. The points in connection with these latter examinations will be discussed later. Four hundred and ninety-seven public-school children outside of the city of Tuscaloosa, but within that county, were examined, but as a majority of these rural schools have but a five months' school year, most of the schools had just closed when the survey was begun. This is to be regretted, as it would be highly desirable to determine whether the disease exists scattered over the county to the same extent as within the city of Tuscaloosa. Conditions in the relatively small number of rural schools visited would indicate that it may be more prevalent in the rural districts than in Tuscaloosa.

Careful inquiry elicited the fact that the infection present in the schools has been of relatively recent introduction. The predominating type of case clinically, together with the absence of severe and chronic cases, seems to bear out this supposition, at least among the class of population examined. Authentic cases of trachoma were observed among school children as early as two years ago. These, however, were too few in number to cause excitement at that time, and it has only been within the present school year that cases of trachoma have been seen with such frequency as to cause alarm.

Schools Visited.

	Examined.	Positive.	Suspicious.	Per cent positive.	Per cent suspicious.
Tuscaloosa:					
Tuscaloosa High School.....	260	5	6	2.5	3
Stafford.....	306	6	17	1.9	5.5
West End.....	178	9	10	5	5.5
Jemison.....	139	7	6	5.7	4.3
Chapel.....	55	2	5	3.6	9
Negro public.....	244	3	13	1.2	5.3
	1,122	32	57	2.8	5.1
Rural:					
Northport.....	156	10	13	6.4	8.3
Northport (negro).....	65	2	5	3	7.6
Holt.....	106	4	5	3.7	4.7
Brookwood.....	93	5	2	5.3	2
Searles.....	66	2	5	3	7.5
Searles (negro).....	11	3	0	27.2	0
	497	26	30	5.2	6
Total	1,619	58	87	3.5	5.4
University of Alabama.....	240	1			
Alabama Insane Hospital.....	900	6			

Diagnosis and Type of Disease.

The examination of the school children of Tuscaloosa presented the usual conditions found among school children when examined for trachoma—that is, the occurrence of many cases of early follicular change in the conjunctivæ. The occurrence of such cases in so many intermediate and indeterminate forms is usually so great as to prevent a rigid classification of all cases of palpebral disease found. In contrast to the difficulty in diagnosis that arises most frequently in immigration work, where the controversy is whether a given case has advanced to a point of cicatrization where it is no longer infective, in school-inspection work, where the predominating type of trachoma is the early or beginning case, and where there exist so many variable types of follicular changes in the lids, the difficulty arises in differentiating the beginning trachoma from these cases of simple follicular change.

Recognizing the fact that it is just such cases as these that cause confusion and disagreements in diagnosis in public-health work of this character, and that the diagnosis of trachoma in its very early stages depends largely upon the personal equation of the examiner, it was decided not to attempt a definite diagnosis in all cases of palpebral diseases encountered, but that a diagnosis of trachoma should be made only in cases in which there could be no question as to the nature of the existing conditions. Such cases as were palpably folliculosis were excluded from consideration and the intermediate or border-line cases, in which there existed an element of doubt as to diagnosis, classified as suspicious, conceding to either diagnosis the existence of a liberal possibility. This, necessarily, has resulted in a rather large group under the latter heading, yet these cases can be handled along lines that will eliminate all but a remote danger should they be true trachoma, and, at the same time, obviate the possibility of injustice to the individual should they be follicular conjunctivitis.

Other palpebral conditions found were a number of cases of acute conjunctivitis or "pink eye," blepharitis, styne, and numerous cases of chronic conjunctivitis or so-called "granulated lids."

In the majority of positive cases the patients denied having eye disease, and as many cases of trachoma have their onset by gradual lymphoid proliferation instead of with the very acute symptoms so common to European cases, these statements were very probably based upon an ignorance of the existing condition. Again, the majority of individuals found infected with this type of trachoma were at an age when they could be expected to pay but little attention to the slight subjective symptoms accompanying such an onset. The great majority of positive cases were of the early so-called follicular type, yet very definite of diagnosis, presenting an abundance of

granulations on both lower and upper lids, and involving both the tarsal cartilages and retro-tarsal folds, and were classified as trachoma only when there existed the accompanying evidences of active inflammation. In no case was the diagnosis of trachoma based merely upon the existence of a few lymphoid follicles distributed along the tarsal margin or upon only the lower lids.

The majority of cases were in the stage of active and progressive lymphoid hypertrophy, but a few had advanced to the stage of retrogression, the follicles having been, or beginning to be, extruded, and beginning cicatrization was evident. As would be expected in a group of cases of this character, well-advanced cicatrization was rarely observed, only two or three cases at this stage being seen, while only two cases were found that presented corneal involvement or other serious complications. One of these showed an advanced pannus of the right eye, and was at the time of examination absent from school on account of the attendant visual incapacity.

In this survey, ptosis, or narrowing of the palpebral fissure, was a frequent first indication of an existing trachoma, especially in those cases showing thickening of the lids or beginning tendency toward chronicity. A slight photophobia was noticed in a number of cases; this, however, not being dependent upon corneal involvement, but rather the result of the onset of the acute condition. Bulbar conjunctival congestion was frequently noticed, and the majority of cases presented an active secretion, usually semipurulent in character—a point demonstrating the infectivity and danger from such cases.

Age Tabulations.

Age.	Number having trachoma.	Per cent of total cases.	Number of suspicious cases.	Per cent of total suspicious cases.
5	0	0	2	2.2
6	1	1.7	0	0
7	15	25.8	11	12.6
8	4	6.8	4	4.5
9	7	12	12	13.7
10	9	15.5	11	12.6
11	1	1.7	14	16
12	10	17.2	13	14.8
13	4	6.8	8	9.1
14	2	3.4	5	5.7
15	2	3.4	5	5.7
16	3	5.1	1	1.1
17	0	0	0	0
20	0	0	1	1.1
	58		57	

The tabulation of positive and suspicious cases indicates that the greatest infection was in children between the ages of 6 and 12, 81 per cent of the cases occurring between these years. Reduced further to percentages, it appears that the greatest number of cases found at any age was 15 cases at the age of 7, or 25.8 per cent. These figures are

substantiated by the fact that in several schools the greatest number of cases were found in the primary rooms, in which were children ranging in age from 5 to 10 years. This is readily explained by the fact that children of these years are considerably more careless in their personal habits than children of greater age, and that the chances of disseminating the infection by means of pencils, books, tablets, etc., as well as by actual contact, is much greater among young children than among older pupils. Very few cases were found above the age of 12 years. Again, the greatest number of suspicious cases were found in children between the ages of 7 and 12, which fact can be explained in the same manner as the positive cases, even though about as many children above the age of 12 were examined as below that age.

University and State Hospital for Insane.

In connection with the examination of the State university and the State insane hospital it may be explained that these examinations were made rather because the individuals were available for examination than on the supposition that an alarming infection with trachoma would be found. In 240 examinations in the State university 1 case was found. This case, however, was of recent origin, and, as the patient resided in the home of a case in a public-school pupil, he very probably contracted the infection from this source.

The Alabama State Hospital for the Insane was entered with the expectation that it might serve as an index for the State. Had any number of cases been found this would undoubtedly have been a valuable point in demonstrating the location of established foci of infection within the State, provided it were possible to exclude cases originating within the institution.

However, upon examination of 900 inmates and employees but 6 cases were found—5 in patients and 1 in a nurse. Examination of the entire hospital personnel of about 1,500 patients would probably not have produced additional cases, as all cases of eye trouble were asked for, producing, in addition to various nontrachomatous diseases of the eye, 5 of the 6 mentioned cases, after which the 900 patients were examined, with the finding of 1 additional case, but no suspicious cases. Four of the cases were undoubtedly of a great many years' standing and could not possibly have been contracted within the institution. All 4 showed completely cicatrized lids with severe and extensive corneal complications, while 1 of the patients reported that her husband was blind from the same cause. The nurse showed severe pannus in the right eye and completely cicatrized lids also, and gave a history of having had trachoma for about five years and prior to entering the institution. The sixth case was of the early type, and it can be safely said that the infection had its onset during the last year or two within the hospital. The 5 markedly chronic cases would

indicate trachomatous foci in the following counties in Alabama: Shelby, Marion, Etowah, Jackson, and Lamar.

Origin and Spread.

The examination of school children with the resultant finding of a majority of very early cases of trachoma could not be expected in itself to throw definite light on the length of time the infection had been present in this locality. An examination of the same number of adults, if the disease were found, would enable us to determine this point, at least approximately. Still a point of value in determining the probable duration is that but a very few of the total number of cases found, either active or recovered, were encountered among the pupils ranging in age from 16 to 20 years. It might reasonably be supposed that if the infection has been present in the community for a number of years there would have been found a relatively larger number of active cases as well as a number of late complications, and cicatrized lids among pupils of these ages. Again, the physicians of the city stated that they had seen no trachoma among adults, and prior to two years ago no trachoma at any age. Taking into consideration all facts determined by this survey, and particularly that three-fourths of the cases were found as early cases among children of the primary departments, it would appear that the disease is of comparatively recent introduction.

Just where the infection originally came from it is of course impossible to determine. Tuscaloosa has at the present time no foreign-born population, so that possibility of introduction may be eliminated. That trachoma to a slight degree, at least, has existed for a number of years within the State of Alabama, and might have been introduced from such indigenous foci appears probable, as is indicated by the finding of five well-defined cases of a number of years' standing in the Alabama State Hospital for the Insane. These patients were all from counties situated in the northern part of the State. Possibly considerable trachoma would be found in these localities if a careful survey were made, as they are situated in a region both geographically and economically somewhat like the mountainous counties of eastern Kentucky.

Having been introduced, unobserved, the usual conditions conducive to spread were necessarily operative. The schools, as usual, offered ideal conditions for the dissemination of the infection. However, the schools are not to be blamed altogether, as finding in a number of instances two or more children of the same family infected indicates that the disease has also been spread through unhygienic conditions within the homes. Probably as many cases have originated at home as within the schools, and this point would indicate

that eradication depends upon the introduction of preventive measures within the home as well as within the school.

A review of the method of the spread of trachoma is merely, in general, the often repeated statement that the disease is transmitted through intimate and unhygienic association with infected individuals. The common use of such articles as towels, handkerchiefs, washbasins, books, pencils, toys, etc., are everyday means of communicating the disease from the infected to the noninfected individual. When the diseased eyes are actually secreting a purulent discharge, the ease with which infection may be communicated can very readily be appreciated. At home the common use of articles of everyday necessity, bathing utensils, towels, wash cloths, and contaminated bedclothes, pillow slips, sheets, etc., is usually mentioned as the means of spreading the disease among successive members of the family. At school, books, pencils, etc., and actual contact of the infected with noninfected pupils are the means of transmitting the etiological factor. It is universally conceded that trachoma is an infectious disease, and that the infectious agent exists and is transmitted in the secretions and discharges from the diseased eyes. With pain or burning present in a diseased eye and one that is continually discharging, it is readily understood that the child will rub the eyes with hands or handkerchief, thereby keeping up a continuous stream of infectious secretion from the eyes to everything touched, and in this manner conveying the disease to the uninfected individual. The necessary contamination of bed linen and articles of toilet necessity under such conditions is obvious. Flies have been mentioned as concerned in the spread of trachoma. However, in the present instance, this is but a remote possibility. It can safely be said that the cause lies almost exclusively in the intimate association mentioned above, and in direct transmission of the infection from person to person.

Prevention.

Aside from the necessity of eradicating the existing disease by appropriate treatment, a most important necessity at the present time is the prevention of future cases. Without adequate attention to this point the situation will resolve itself into treatment of a constantly increasing number of cases of trachoma. The first step directed toward prophylaxis of infectious eye diseases is of course segregation of the affected individuals. This is to be accomplished by exclusion from school of all definite cases of trachoma found during the secreting or dangerous stage. This will minimize to a great extent the danger of spread through contact of infected with

uninfected pupils. Yet it does not take into consideration the protection of the community at large or the other members of the household where the excluded cases live. This is to be gained only through thorough instruction of the community, concerning the manner in which the disease is transmitted. Complete publicity should be given the situation, for, notwithstanding the inevitable opposition of certain individuals involved, publicity and popular instruction concerning the disease offer the best means of protecting the community.

By this is meant particularly popular instruction concerning the manner by which the disease is conveyed from person to person, how it may be prevented, and the difficulty of affecting a cure once it is contracted. School children and adults alike should be instructed in the rules of bodily cleanliness, particularly of the hands and eyes, and the use of individual toilet utensils and accessories, clean bed linen, etc., should be insisted upon. It should be taught that the danger lies in the discharge and secretion from the diseased eyes, and that anything that conveys this secretion is dangerous. The teachers should be carefully instructed, particularly in regard to the points of school hygiene involved in this disease, so that they may, at all times, intelligently exercise supervision over their pupils. Teachers should also be taught how to detect early cases of inflamed and discharging eyes, and should be required to report such cases to the school physician as soon as noted.

Such practices as collecting pens, ink, etc., into one receptacle and distributing them again when they are to be used is illustrative of how the infection may be spread. This was noted in one of the schools examined, and, with other practices of like character, should be dispensed with. Supervision of the trachomatous pupil after exclusion from school is necessary in order that the immediate family and community at large may be protected. Treatment should be facilitated as much as possible, and to do this it devolves upon the community as a duty to furnish adequate treatment if the individual is not able to provide it for himself. Personal instruction in how to prevent the transmission of the disease to others should be given and further spread limited by instruction of the uninfected individual concerning the proper hygienic procedure to follow in order to avoid the disease. More good can probably be accomplished by teaching a community to protect itself by habits of strict personal hygiene and prophylaxis than by depending entirely upon the probability that the infected individual will himself avoid spreading the disease by carelessness and otherwise.

Recommendations.

The following recommendations were suggested to be applied in this instance if further spread of the disease is to be limited:

Exclusion from the public schools of all known positive cases of trachoma.

Treatment of the suspicious cases. That young school children are very prone to lymphoid hypertrophy, especially of the conjunctivæ, is well known and to exclude this class of children from school would be manifestly an injustice, as the majority will very probably prove not to be trachomatous. The possibility of spread from any of the suspicious cases that may prove to be trachoma will be reduced to a minimum by allowing these children to remain in school provided they accept active and consistent treatment at the hands of the school authorities. To meet this necessity, medical attention should be furnished by the school board free of cost. This would necessitate the employment of a medical officer and nurse to give attention to all cases, and at the same time to supervise the carrying out of strict sanitary precautions in so far as these children are concerned. Free medical attention might also be given any of the excluded patients who desire it in order that adequate treatment might be received by those unable to provide it for themselves.

The return of any excluded case to school should be permitted only upon a certificate from the health officer and school physician, this certificate to be rendered only when the case is entirely recovered or when it can be pronounced no longer infective.

The entire enrollment of the public school should be examined periodically, and if new cases of eye disease are found they should be placed in either of the before-mentioned classes and treated accordingly.

Treatment should be based upon the assumption that trachoma is essentially a surgical disease, and in this instance, on account of the large number of early cases found, surgical treatment, together with such additional aftertreatment as is indicated, offers the most favorable means for a rapid cure in the majority of cases.

A publicity campaign should be instituted to educate the people in the modes of spread, the dangers from this disease and the method of prophylaxis by which it may be avoided.

ROCKY MOUNTAIN SPOTTED FEVER.**FOUND PRESENT IN SOUTHEASTERN MONTANA.**

A report by L. D. FRICKS, Surgeon, United States Public Health Service.

On April 25 the State health officer of Montana requested that an investigation be made of a suspicious case reported by Dr. Heldman, of Ismay, Fallon County, Mont. Inasmuch as this point is outside of the supposed area of distribution of *Dermacentor andersoni* and *Dermacentor modestus* it was not expected that the case would prove to be one of Rocky Mountain spotted fever.

Assist. Surg. Spencer was sent to collect blood specimens for guinea-pig inoculations and to obtain other information in regard to the case.

A physician from Miles City, who happened to be in Ismay at the time, requested to see this case with Dr. Spencer and immediately thereafter three suspicious cases were reported from Miles City.

Dr. Spencer saw the four cases and reported them all to be Rocky Mountain spotted fever.

In view of the gravity of the situation it was deemed advisable to make a further investigation of suspicious cases reported from the southeastern part of the State in order to confirm the diagnosis already made and to determine, if possible, the changes in conditions which could account for the spread of the disease into territory not previously known to harbor spotted-fever ticks.

At the request of the State health officer, I left for Miles City on April 6, and investigated 10 cases including those already seen by Dr. Spencer. One additional case was reported to the State health officer from Sidney, Fallon County, which was not seen by me.

The cases were located as follows:

One case from 4 miles west of Ismay, Fallon County.

One case from Sidney, Fallon County; reported but not seen.

Two cases from 10 miles north of Miles City, Dawson County.

Two cases from near Jordan, Dawson County.

Two cases from near Powderville, Custer County.

Two cases, one 6 and one 16 miles north of Forsythe, Rosebud County.

One case from 16 miles northwest of Hysham, Rosebud County.

All of the cases seen were of the mild type of the disease such as is found just across the State line in Wyoming, and all of them were recovering.

An investigation of grazing conditions disclosed the fact that southeastern Montana was first a horse and cattle country; then sheep came in and replaced to a considerable extent the other live stock. About five years ago dry farming was first undertaken in this section. The dry farmers took up the water holes and located along

the small water courses and thus in turn forced the sheep out of the country or entirely away from the settlements. Each dry farmer brought with him a few horses and milk cows, and thus established a breeding place for ticks in his immediate vicinity.

A former survey for ticks in this section, reported by the Department of Agriculture in Bulletin No. 105, showed no ticks east of Rosebud County. Whether there may have been a few ticks in Custer County at that time, or whether they have been introduced since, is not known, but there seems no reason to doubt that the tick infestation has greatly increased during the last few years. All persons interrogated reported this to be a fact, and specimens of ticks collected by me were found to be *Dermacentor andersoni*.

For many years there has been a movement of horses and cattle, in part during the spring months, from Rosebud County, Mont., and from northern Wyoming into Custer County, Mont. The tick infestation of this section was probably accomplished in this way, and under the favorable conditions which have existed recently the ticks have rapidly increased in numbers.

A monthly horse sale is held at Miles City, to which thousands of horses are brought. The majority of the horses are shipped out again by rail, but hundreds are bought by stockmen in Miles City for speculative purposes, and turned loose on neighboring ranges until the next sale. Ticks might have been brought into the county easily in this way.

The survey of Wyoming for Rocky Mountain spotted fever, which was made last year, showed that the disease had occurred on the Crow Indian Reservation and had long been known to be present around Sheridan, Buffalo, and Gillette, in northeastern Wyoming, on the headwaters of the Tongue and Powder Rivers. These streams flow northeast through Custer County, Mont.

In the light of conditions shown in this investigation, it is by no means remarkable that Rocky Mountain spotted fever has spread into the southeastern part of Montana. The only remarkable fact is that so many cases should have occurred the first year it was recognized. Had the invasion been more gradual it would have been much more easily understood.

All of the physicians who had cases of the disease this season frankly admitted that they did not know in the beginning what it was, but they all insisted that they had never seen anything exactly like it before. A more careful and extensive survey might show that there were previous cases of the disease in this section, but if so it is believed that they were extremely rare.

PLAGUE-PREVENTION WORK.

CALIFORNIA.

The following report of plague-prevention work in California for the week ended May 15, 1915, was received from Passed Asst. Surg. Hurley, of the United States Public Health Service, in temporary charge of the work:

San Francisco, Cal.

RAT PROOFING.		RAT PROOFING—continued.	
New buildings:		Old buildings—Continued.	
Inspections of work under construction.	216	Cubic feet new foundation walls installed	7,539
Basements concreted (square feet, 29,384).	38	Concrete floors installed (square feet, 27,681)	45
Floors concreted (square feet, 17,706)	31	Basements concreted (square feet, 14,525)	18
Yards, passageways, etc. (square feet, 15,383)	84	Yards and passageways, etc., concreted (square feet, 27,681)	98
Total area of concrete laid (square feet)	62,473	Total area concrete laid (square feet)	69,887
Class A, B, and C (fireproof) buildings:		Floors rat-proofed with wire cloth (square feet, 8,352)	7
Inspections made	264	Buildings razed	15
Roof and basement ventilators, etc., screened	4,490	New garbage cans stamped approved	350
Wire screening used (square feet)	26,410	Nuisances abated	417
Openings around pipes, etc., closed with cement	8,748		
Sidewalk lens lights replaced	18,000	OPERATIONS ON THE WATER FRONT.	
Old buildings:		Vessels inspected for rat guards	21
Inspections made	719	Reinspections made on vessels	24
Wooden floors removed	37	New rat guards procured	6
Yards and passageways, planking removed	9	Defective rat guards repaired	3
		Vessels on which cargo was inspected	1

Amount of cargo inspected and description of same.	Condition.	Rat evidence.
Steamer Congress from Seattle:		
150 cases milk, salmon, cheese, and household goods	O. K.	None.
600 sacks wheat, flour, and bran	do.	Do.

Rats trapped on wharves and waterfront	26	RATS COLLECTED AND EXAMINED FOR PLAGUE.	
Rats trapped on vessels	19	Collected	308
Traps set on wharves and waterfront	175	Examined	260
Traps set on vessels	46	Found infected	0
Vessels trapped on	10	RATS IDENTIFIED.	
Poisons placed on waterfront (pieces)	3,600	Mus norvegicus	156
Poisons placed within Panama-Pacific International Exposition grounds (pieces)	7,200	Mus musculus	65
Bait used on waterfront and vessels. Bacon (pounds)	6	Mus alexandrinus	60
Amount of bread used in poisoning waterfront (loaves)	12	Mus rattus	27
Pounds of poison used on waterfront	6		

Squirrels collected and examined for plague.

San Benito County	309
Contra Costa County	417
Alameda County	100
San Joaquin County	184
Merced County	91
Stanislaus County	38
Santa Cruz County	6
Total	1,145
Found infected	None.

Ranches inspected and hunted over.

Contra Costa County.....	34
San Benito County.....	37
San Joaquin County.....	19
Alameda County.....	16
Merced County.....	15
Santa Cruz County.....	5
Stanislaus County.....	3
Total.....	129

Record of plague infection.

Places in California.	Date of last case of human plague.	Date of last case of rat plague.	Date of last case of squirrel plague.	Total number rodents found infected since May, 1907.
Cities:				
San Francisco.....	Jan. 30, 1908	Oct. 23, 1908	(¹)	398 rats.
Oakland.....	Aug. 9, 1911	Dec. 1, 1908	(¹)	126 rats.
Berkeley.....	Aug. 28, 1907	(¹)	(¹)	None.
Los Angeles.....	Aug. 11, 1908	(¹)	Aug. 21, 1908	1 squirrel.
Counties:				
Alameda (exclusive of Oakland and Berkeley).....	Sept. 24, 1909	Oct. 17, 1909 ²	Aug. 7, 1914	286 squirrels; 1 wood rat.
Contra Costa.....	May 17, 1914	(¹)	Mar. 4, 1915	1,567 squirrels.
Fresno.....	(¹)	(¹)	Oct. 27, 1911	1 squirrel.
Merced.....	(¹)	(¹)	July 12, 1911	5 squirrels.
Monterey.....	(¹)	(¹)	Apr. 13, 1915	37 squirrels.
San Benito.....	June 4, 1913	(¹)	Aug. 26, 1911	18 squirrels.
San Joaquin.....	Sept. 18, 1911	(¹)	Jan. 29, 1910	1 squirrel.
San Luis Obispo.....	(¹)	(¹)	July 23, 1913	25 squirrels.
Santa Clara.....	Aug. 31, 1910	(¹)	May 17, 1910	3 squirrels.
Santa Cruz.....	(¹)	(¹)	June 2, 1911	13 squirrels.
Stanislaus.....	(¹)	(¹)		

¹ None.² Wood rat.

The work is being carried on in the following named counties: Alameda, Contra Costa, San Francisco, Merced, San Joaquin, Santa Cruz, Stanislaus, San Benito, Santa Clara and San Mateo.

LOUISIANA—NEW ORLEANS—PLAGUE ERADICATION.

The following reports of plague-eradication work at New Orleans were received from Surg. Creel, of the United States Public Health Service, in temporary charge of the work:

WEEK ENDED MAY 15, 1915.

OUTGOING QUARANTINE.		FIELD OPERATIONS.	
Vessels fumigated with sulphur.....	16	Rats trapped.....	5,902
Vessels fumigated with carbon monoxide...	9	Number of premises inspected.....	12,500
Vessels fumigated with hydrocyanic gas....	1	Notices served.....	1,614
Pounds of sulphur used.....	4,871	BUILDINGS RAT PROOFED.	
Pounds of coke consumed in carbon monoxide fumigation.....	14,200	By elevation.....	164
Pounds of potassium cyanide used in hydrocyanic gas fumigation.....	102	By marginal concrete wall.....	244
Pounds of sodium carbonate used in hydrocyanic gas fumigation.....	120	By concrete floor and wall.....	325
Pounds of sulphuric acid used in hydrocyanic gas fumigation.....	104	By minor repairs.....	424
Clean bills of health issued.....	32	Square yards of concrete laid.....	11,810
Foul bills of health issued.....	8	Total buildings rat proofed.....	1,157
		Total buildings rat proofed to date.....	35,212
		Number of abatements.....	265
		Number of abatements to date.....	24,709

WEEK ENDED MAY 15, 1915—continued.

LABORATORY OPERATIONS.		LABORATORY OPERATIONS—continued.	
Rodents examined.....	2,831	Putrid.....	114
Mus norvegicus.....	2,326	Muskrats.....	97
Mus rattus.....	80	Total rodents received at laboratory.....	5,918
Mus alexandrinus.....	86	Number of suspicious rats.....	23
Mus musculus.....	3,258	Plague rats confirmed.....	4
Wood rats.....	70		

Rodent cases.

Case No.	Address.	Captured.	Diagnosis confirmed.	Treatment of premises.
238	2482 Royal Street.....	May 4, 1915	May 14, 1915	All flooring removed, and entire premises sprayed with a pulicide solution. Intensive trapping.
239	.....do.....	.....do.....	.....do.....
240	.....do.....	.....do.....	.....do.....
241	.....do.....	.....do.....	.....do.....

Last case of human plague, Oct. 4, 1914.

Last case of rodent plague, May 14, 1915.

Total number of rodents captured to May 15..... 345,285

Total number of rodents examined to May 15..... 248,407

Total cases of rodent plague to May 15, by species:

Mus musculus.....	4
Mus rattus.....	16
Mus norvegicus.....	213
Mus alexandrinus.....	8

Total rodent cases to May 15, 1915..... 241

WEEK ENDED MAY 22, 1915.

OUTGOING QUARANTINE.		BUILDINGS RAT PROOFED.	
Vessels fumigated with sulphur.....	12	By elevation.....	171
Vessels fumigated with carbon monoxide...	7	By marginal concrete wall.....	206
Vessels fumigated with hydrocyanic gas....	1	By concrete floor and wall.....	309
Pounds of sulphur used.....	4,492	By minor repairs.....	404
Pounds of coke consumed in carbon monoxide fumigation.....	10,500	Square yards of concrete laid.....	38,888
Pounds of potassium cyanide used in hydrocyanic-gas fumigation.....	102	Total buildings rat proofed.....	1,160
Pounds of sodium carbonate used in hydrocyanic-gas fumigation.....	120	Total buildings rat proofed to date.....	36,372
Pounds of sulphuric acid used in hydrocyanic-gas fumigation.....	104	Number of abatements.....	151
Clean bills of health issued.....	29	Number of abatements to date.....	24,851
Foul bills of health issued.....	6		
FIELD OPERATIONS.		LABORATORY OPERATIONS.	
Rats trapped.....	5,596	Rodents examined.....	2,588
Number of premises inspected.....	13,036	Mus norvegicus.....	1,969
Notices served.....	1,691	Mus rattus.....	96
		Mus alexandrinus.....	80
		Mus musculus.....	3,375
		Wood rats.....	67
		Putrid.....	161
		Musk rats.....	63
		Total rodents received at laboratory.....	5,659
		Number of suspicious rats.....	14
		Plague rats confirmed.....	1

Rodent case.

Case No.	Address.	Captured.	Diagnosis confirmed.	Treatment of premises.
242	Gravier and Saratoga (parish prison).	May 10	May 17	Rat proofing initiated.

Last case of human plague, Oct. 4, 1914.

Last case of rodent plague, May 17, 1915.

Total number of rodents captured to May 22..... 350,881

Total number of rodents examined to May 22..... 250,995

Total cases of rodent plague to May 22, by species:

Mus musculus.....	4
Mus rattus.....	16
Mus norvegicus.....	214
Mus alexandrinus.....	8
Total rodent cases to May 22, 1915.....	242

WASHINGTON—SEATTLE—PLAGUE ERADICATION.

The following reports of plague-eradication work at Seattle were received from Surg. Lloyd, of the United States Public Health Service, in charge of the work:

WEEK ENDED MAY 8, 1915.

RAT PROOFING.		CLASSIFICATION OF RODENTS.	
New buildings inspected.....	42	Mus rattus.....	18
Basements concreted, new buildings (19), square feet.....	18,260	Mus alexandrinus.....	114
Floors concreted, new buildings (15), square feet.....	27,490	Mus norvegicus.....	175
Yards, etc., concreted, new structures (3), square feet.....	2,875	Mus musculus.....	109
Sidewalks concreted.....square feet..	46,790		
Total concrete laid, new structures...	95,415	WATER FRONT.	
New buildings elevated.....	6	Vessels inspected and histories recorded....	9
New premises rat proofed, concrete.....	34	Vessels fumigated.....	1
Old buildings inspected.....	7	Sulphur used.....pounds..	950
Premises rat proofed, concrete, old buildings.....	2	New rat guards installed.....	10
Floors concreted, old buildings.....	2	Defective rat guards repaired.....	6
Wooden floors removed, old buildings.....	2	Fumigation certificates issued.....	1
Buildings razed.....	4	Port sanitary statements issued.....	39
LABORATORY AND RODENT OPERATIONS.		The usual day and night patrol was maintained to enforce rat guarding and fending.	
Dead rodents received.....	15	MISCELLANEOUS WORK.	
Rodents trapped and killed.....	320	Rat-proofing notices sent to contractors.....	19
Rodents recovered after fumigation.....	81	Fishing vessels inspected and medicine chests installed.....	3
Total.....	416	Lectures delivered on sanitary subjects.....	1
Rodents examined for plague infection.....	284	RODENTS EXAMINED IN EVERETT.	
Rodents proven plague infected.....	0	Mus norvegicus trapped.....	45
Poison distributed.....pounds..	17	Mus norvegicus found dead.....	4
Bodies examined for plague infection.....	4	Mus musculus trapped.....	3
Bodies found plague infected.....	0	Total.....	52
		Rodents examined for plague infection.....	50
		Rodents proven plague infected.....	0
		RAT-PROOFING OPERATIONS IN EVERETT.	
		New buildings inspected.....	2
		New buildings rat proofed, concrete foundations.....	2

WEEK ENDED MAY 15, 1915.

RAT PROOFING.	
New buildings inspected.....	40
Basements concreted, new buildings.....square feet, 10,280..	12
Floors concreted, new buildings.....square feet, 36,475..	20
Yards, etc., concreted, new structures.....square feet, 4,275..	5
Sidewalks concreted.....square feet, 27,420.....	

Total concrete laid,
 new structures..... 78,450

New buildings elevated.....	8
New premises rat proofed, concrete.....	32
Buildings razed.....	5

LABORATORY AND RODENT OPERATIONS.

Dead rodents received.....	14
Rodents trapped and killed.....	284
Rodents recovered after fumigation.....	14
Total.....	312

Rodents examined for plague infection.....	217
Rodents proven plague infected.....	0
Poison distributed, pounds.....	22
Bodies examined for plague infection.....	3
Bodies proven plague infected.....	0

CLASSIFICATION OF RODENTS.

Mus rattus.....	21
Mus alexandrinus.....	62
Mus norvegicus.....	166
Mus musculus.....	62
Unclassified.....	1

WATER FRONT.	
Vessels inspected and histories recorded.....	8
Vessels fumigated.....	3
Sulphur used, pounds.....	3,750
New rat guards installed.....	6
Defective rat guards repaired.....	10
Fumigation certificates issued.....	3
Port sanitary statements issued.....	46

The usual day and night patrol was maintained to enforce rat guarding and fending.

MISCELLANEOUS WORK.

Rat-proofing notices sent to contractors.....	20
Fishing vessels inspected and medicine chests installed.....	3
Lectures delivered on sanitary subjects.....	2

RODENTS EXAMINED IN EVERETT.

Mus norvegicus trapped.....	51
Mus norvegicus found dead.....	6
Mus musculus trapped.....	2
Total.....	59

Rodents examined for plague infection.....	55
Rodents proven plague infected.....	0

RAT-PROOFING OPERATIONS IN EVERETT.

New buildings inspected.....	3
New buildings rat proofed by concrete founda- tions.....	2
New buildings elevated.....	1
Basements concreted, new buildings.....square feet, 750..	1
Yards concreted.....square feet, 140..	1

Total concrete laid, new
 structures..... 800

HAWAII—HONOLULU—PLAGUE PREVENTION.

The following report of plague-prevention work at Honolulu for the week ended May 8, 1915, was received from Surg. Trotter, of the United States Public Health Service:

Total rats and mongoose taken.....	437	Average number of traps set daily.....	1,085
Rats trapped.....	432	Cost per rat destroyed.....	19 cents
Mongoose trapped.....	4	Last case rat plague, Aiea, 9 miles from Hono- lulu, Apr. 12, 1910.	
Rats killed by sulphur dioxide.....	1	Last case human plague, Honolulu, July 12, 1910.	
Examined microscopically.....	369	Last case rat plague, Kalopa stable, Paauhau, Hawaii, Aug. 29, 1914.	
Showing plague infection.....	0	Last case human plague, Paauhau Landing, Hawaii, Aug. 17, 1914.	
Classification of rats trapped:			
Mus alexandrinus.....	239		
Mus musculus.....	123		
Mus norvegicus.....	49		
Mus rattus.....	21		
Classification of rats killed by sulphur dioxide:			
Mus alexandrinus.....	1		

PORTO RICO—PLAGUE PREVENTION.

During the two weeks ended May 8, 1915, 350 rats and 38 mice were examined in Porto Rico. No plague infection was found. The rodents were collected in San Juan, Puerta de Tierra, and Santurce.

PREVALENCE OF DISEASE.

No health department, State or local, can effectively prevent or control disease without knowledge of when, where, and under what conditions cases are occurring.

IN CERTAIN STATES AND CITIES.

CEREBROSPINAL MENINGITIS.

State Reports for April, 1915.

Places.	New cases reported.	Places.	New cases reported.
Indiana:		Texas:	
Delaware County.....	4	Galveston County.....	1
Hamilton County.....	1		
Marion County.....	2		
Montgomery County.....	1		
Noble County.....	1		
Washington County.....	1		
Total.....	10		

City Reports for Week Ended May 15, 1915.

Places.	Cases.	Deaths.	Places.	Cases.	Deaths.
Boston, Mass.....	1		New Orleans, La.....	1	
Butte, Mont.....		1	New York, N. Y.....	10	7
Chicago, Ill.....	4	4	Providence, R. I.....	1	1
Cleveland, Ohio.....	1		St. Louis, Mo.....	2	1
Detroit, Mich.....	1		Schenectady, N. Y.....	1	
Duluth, Minn.....	1	1	Stockton, Cal.....	1	
Medford, Mass.....		1	Washington, D. C.....	1	
Memphis, Tenn.....	1	1	Wheeling, W. Va.....		1
Newark, N. J.....	1		York, Pa.....	1	

DIPHThERIA.

California—San Francisco.

Passed Asst. Surg. Hurley reported by telegraph that during the week ended May 29, 1915, 46 new cases of diphtheria were notified in San Francisco, Cal.

See also Diphtheria, measles, scarlet fever, and tuberculosis, page 1707.

ERYSIPELAS.**City Reports for Week Ended May 15, 1915.**

Places.	Cases.	Deaths.	Places.	Cases.	Deaths.
Allentown, Pa.	1	.....	Nashville, Tenn.	.....	1
Bridgeport, Conn.	1	.....	New York, N. Y.	.....	14
Brockton, Mass.	2	1	Oakland, Cal.	1	.....
Chicago, Ill.	38	2	Philadelphia, Pa.	12	1
Cincinnati, Ohio.	4	.....	Pittsburgh, Pa.	6	2
Cleveland, Ohio.	5	.....	Providence, R. I.	.....	1
Dayton, Ohio.	1	.....	Reading, Pa.	1	.....
Detroit, Mich.	2	1	Rochester, N. Y.	.....	1
Elgin, Ill.	1	.....	St. Louis, Mo.	5	.....
Hartford, Conn.	1	.....	San Francisco, Cal.	2	.....
Jersey City, N. J.	9	1	Schenectady, N. Y.	.....	1
Lancaster, Pa.	1	.....	Seattle, Wash.	3	.....
Los Angeles, Cal.	1	.....	Wilkes-Barre, Pa.	1	.....
Memphis, Tenn.	1	.....		

MALARIA.**City Reports for Week Ended May 15, 1915.**

Places.	Cases.	Deaths.	Places.	Cases.	Deaths.
Brockton, Mass.	1	.....	Newport News, Va.	1	1
Galveston, Tex.	.....	1	Philadelphia, Pa.	1	.....
New Orleans, La.	.....	2	Wilmington, N. C.	.....	1

MALTA FEVER.**Texas—Brackettville.**

Dr. F. Paschal, of San Antonio, Tex., reported through Surg. von Ezdorf May 18, 1915, the occurrence of a case of Malta fever at Brackettville, Tex. The patient, L. C., age 34, engaged in raising goats, became ill about March 1, 1915, after having handled several diseased goats.

MEASLES.

See Diphtheria, measles, scarlet fever, and tuberculosis, page 1707.

PELLAGRA.**West Virginia—Holden.**

It has been reported that several cases of pellagra are present in the camps of the United States Coal & Oil Co., at Holden, W. Va.

State Reports for April, 1915.

During the month of April, 1915, pellagra was notified in States as follows: Indiana, 1 death; Texas, 8 cases.

City Reports for Week Ended May 15, 1915.

Places.	Cases.	Deaths.	Places.	Cases.	Deaths.
Charleston, S. C.	5	Mobile, Ala.	.....	1
Galveston, Tex.	1	Nashville, Tenn.	2	3
La Crosse, Wis.	1	New Orleans, La.	3	4
Little Rock, Ark.	2	Wilmington, N. C.	2	2
Memphis, Tenn.	3	.....	Woburn, Mass.	.....	1

PNEUMONIA.**City Reports for Week Ended May 15, 1915.**

Places.	Cases.	Deaths.	Places.	Cases.	Deaths.
Binghamton, N. Y.	1	.....	New Castle, Pa.	1	.....
Braddock, Pa.	1	.....	Newport, Ky.	1	1
Chicago, Ill.	114	57	Norfolk, Va.	3	3
Cleveland, Ohio.	23	14	Philadelphia, Pa.	41	28
Dayton, Ohio.	1	.....	Pittsburgh, Pa.	19	12
Galesburg, Ill.	1	1	Reading, Pa.	3	1
Grand Rapids, Mich.	1	3	Sacramento, Cal.	1	1
Kalamazoo, Mich.	2	3	San Francisco, Cal.	5	5
Lancaster, Pa.	2	.....	South Omaha, Nebr.	1	.....
Los Angeles, Cal.	5	.....	Wilmington, N. C.	1	1
Manchester, N. H.	1	1	York, Pa.	1	.....

POLIOMYELITIS (INFANTILE PARALYSIS).**State Reports for April, 1915.**

Places.	New cases reported.	Places.	New cases reported.
Indiana:		Washington:	
Madison County.	1	Chelan County.	2
St. Joseph County.	1		
Tippecanoe County.	1		
Total.	3		

City Reports for Week Ended May 15, 1915.

During the week ended May 15, 1915, poliomyelitis was notified in cities as follows: Boston, Mass., 1 case; New York, N. Y., 1 case; Pittsburgh, Pa., 1 case.

ROCKY MOUNTAIN SPOTTED FEVER.**Montana.**

Surg. Fricks reported May 18, 1915, that Rocky Mountain spotted fever had appeared in the southeastern part of the State of Montana, in territory not previously known to harbor spotted fever ticks. Ten cases of the disease were located by Surg. Fricks, as follows: Custer County, 2; Dawson County, 4; Fallon County, 2; Rosebud County, 2.

A detailed report in relation to these cases will be found on page 1694.

Washington Report for April, 1915.

The State Board of Health of Washington reported that during the month of April, 1915, 2 cases of Rocky Mountain spotted fever were notified in Lincoln County, Wash.

SCARLET FEVER.

See Diphtheria, measles, scarlet fever, and tuberculosis, page 1707.

SMALLPOX.

Kansas.

Collaborating Epidemiologist Crumbine reported by telegraph that during the week ended May 29, 1915, cases of smallpox were notified in counties of Kansas as follows: Anderson, 1; Barton, 1; Butler, 5; Cherokee, 1; Clay, 2; Comanche, 9; Crawford, 5; Dickinson, 3; Doniphan, 1; Ford, 1; Greenwood, 3; Harper, 4; Kingman, 1; Linn, 1; Marion, 1; Montgomery, 3; Phillips, 3; Pawnee, 1; Rice, 12; Saline, 1; Sedgwick, 17; Waubunsee, 1; Wyandotte, 9.

Massachusetts—New Bedford.

Acting Asst. Surg. Cody reported by telegraph June 1, 1915, that one new case of smallpox had been notified in New Bedford, Mass., and that one case previously reported had resulted in death. A total of 5 cases has been reported since the beginning of the outbreak about May 15, 1915.

Minnesota.

Collaborating Epidemiologist Bracken reported by telegraph that during the week ended May 29, 1915, new foci of smallpox infection were reported in Minnesota, cases of the disease having been notified as follows: Chicago County, Fish Lake Township, 1; Hennepin County, Excelsior, 1; Isanti County, North Branch Township, 1; Stearns County, St. Wendell Township, 1.

Miscellaneous State Reports.

Places.	Cases.	Deaths.	Places.	Cases.	Deaths.
Illinois (Mar. 1-31): ¹			Illinois (Apr. 1-30)—Contd.		
Adams County—			Counties—Continued.		
Clayton.....	11	.....	Franklin.....	15	.....
Clayton Township.....	9	.....	Gallatin.....	2	.....
Brown County—			Greene.....	2	.....
Pea Ridge Township.....	25	.....	Hamilton.....	4	.....
Franklin County—			Hancock.....	1	.....
West Frankfort.....	20	.....	Hardin.....	5	.....
Jersey County—			Henry.....	7	.....
Elsah Township.....	6	.....	Iroquois.....	1	.....
Madison County—			Jackson.....	5	.....
Wood River Township.....	14	.....	Jefferson.....	1	.....
Total.....	85	.....	Jersey.....	1	.....
Illinois (Apr. 1-30):			Kane.....	1	.....
Counties—			Knox.....	4	.....
Adams.....	41	.....	Lake.....	2	.....
Alexander.....	1	.....	La Salle.....	7	.....
Cass.....	6	.....	Lee.....	6	.....
Champaign.....	2	.....	Macoupin.....	2	.....
Christian.....	14	.....	Madison.....	33	.....
Clinton.....	2	.....	McDonough.....	9	.....
Coles.....	2	.....	McHenry.....	1	.....
Cook.....	6	.....	Mercer.....	7	.....
Crawford.....	2	.....	Montgomery.....	1	.....
Ford.....	3	.....	Morgan.....	1	.....
			Moultrie.....	1	.....
			Peoria.....	29	.....

¹ Supplemental to report published in Public Health Reports Apr. 23, page 1235

SMALLPOX—Continued.

Miscellaneous State Reports—Continued.

Places.	Cases.	Deaths.	Places.	Cases.	Deaths.
Illinois (Apr. 1-30)—Contd.			Iowa (Apr. 1-30)—Contd.		
Counties—Continued.			Counties—Continued.		
Randolph.....	1	.....	Monroe.....	2	.....
Richland.....	8	.....	Muscatine.....	3	.....
Rock Island.....	27	.....	O'Brien.....	5	.....
Saline.....	8	.....	Plymouth.....	3	.....
Sangamon.....	5	.....	Polk.....	25	.....
Scott.....	10	.....	Pottawattamie.....	104	.....
Shelby.....	1	.....	Scott.....	76	.....
Stark.....	17	.....	Shelby.....	6	.....
St. Clair.....	36	.....	Story.....	1	.....
Vermilion.....	21	.....	Tama.....	5	.....
Will.....	1	.....	Van Buren.....	12	.....
Total.....	362	.....	Wapello.....	3	.....
Indiana (Apr. 1-30):			Warren.....	1	.....
Counties—			Washington.....	33	.....
Blackford.....	15	.....	Wayne.....	6	.....
Clark.....	21	.....	Webster.....	10	.....
Clinton.....	30	.....	Total.....	414	1
Daviess.....	10	.....	North Dakota (Apr. 1-30):		
Delaware.....	111	1	Counties—		
Dubois.....	1	.....	Adams.....	1	.....
Fountain.....	3	.....	Cass.....	3	.....
Fulton.....	1	.....	Dickey.....	3	.....
Gibson.....	9	.....	Grand Forks.....	1	.....
Grant.....	1	.....	Lamoure.....	5	.....
Greene.....	3	.....	Logan.....	1	.....
Hamilton.....	5	.....	McHenry.....	4	.....
Howard.....	2	.....	McLean.....	1	.....
Huntington.....	3	.....	Morton.....	6	.....
Jay.....	8	.....	Ramsey.....	1	.....
Knox.....	48	.....	Steele.....	5	.....
Lake.....	10	.....	Wells.....	16	.....
Lawrence.....	12	.....	Williams.....	7	.....
Madison.....	43	1	Total.....	54	.....
Marion.....	1	.....	Texas (Apr. 1-30):		
Morgan.....	1	.....	Counties—		
Newton.....	8	.....	Baylor.....	2	.....
Noble.....	1	.....	Bee.....	23	.....
Pike.....	33	1	Cameron.....	25	3
Posey.....	6	.....	Comal.....	6	.....
Rush.....	2	.....	Dallas.....	38	.....
Scott.....	15	.....	Eastland.....	16	.....
St. Joseph.....	1	.....	El Paso.....	23	.....
Tippecanoe.....	6	.....	Franklin.....	24	.....
Vanderburgh.....	24	.....	Galveston.....	6	1
Vigo.....	40	.....	Guadalupe.....	4	.....
Warren.....	1	.....	Hardin.....	1	.....
Washington.....	1	.....	Hidalgo.....	57	2
White.....	2	.....	Jones.....	5	.....
Total.....	478	3	Montgomery.....	1	.....
Iowa (Apr. 1-30):			Navarro.....	7	.....
Counties—			Nolan.....	9	.....
Appanoose.....	3	.....	Palo Pinto.....	5	.....
Boone.....	9	1	Refugio.....	8	.....
Buchanan.....	1	.....	Runnels.....	1	.....
Calhoun.....	1	.....	Tarrant.....	54	.....
Cass.....	1	.....	Taylor.....	35	.....
Cedar.....	4	.....	Tom Green.....	3	.....
Cherokee.....	3	.....	Travis.....	1	.....
Clarke.....	1	.....	Trinity.....	3	.....
Clay.....	2	.....	Webb.....	29	7
Clinton.....	1	.....	Total.....	386	13
Crawford.....	1	.....	Washington (Apr. 1-30):		
Davis.....	1	.....	Chehalis County.....		
Delaware.....	2	.....	Columbia County.....		
Dickinson.....	1	.....	King County—		
Franklin.....	4	.....	Seattle.....	5	.....
Fremont.....	1	.....	Spokane County.....	12	.....
Guthrie.....	12	.....	Spokane.....	11	.....
Hancock.....	16	.....	Whitman County.....	1	.....
Hardin.....	27	.....	Yakima County.....	5	.....
Johnson.....	2	.....	Total.....	41	.....
Keokuk.....	15	.....		
Linn.....	7	.....		
Marion.....	3	.....		
Marshall.....	1	.....		

SMALLPOX—Continued.

City Reports for Week Ended May 15, 1915.

Places.	Cases.	Deaths.	Places.	Cases.	Deaths.
Baltimore, Md.	3	.....	Milwaukee, Wis.	2	.....
Butte, Mont.	2	.....	New Bedford, Mass.	1	.....
Cairo, Ill.	1	.....	New London, Conn.	7	.....
Charleston, S. C.	9	.....	New Orleans, La.	2	.....
Chicago, Ill.	6	.....	Newport, Ky.	4	.....
Cleveland, Ohio	1	.....	Niagara Falls, N. Y.	1	.....
Danville, Ill.	2	.....	Ogden, Utah.	3	.....
Davenport, Iowa.	6	.....	Portland, Oreg.	2	.....
Detroit, Mich.	1	.....	St. Louis, Mo.	2	.....
Evansville, Ind.	10	.....	Salt Lake City, Utah.	1	.....
Galveston, Tex.	1	.....	Sioux City, Iowa.	1	.....
Lexington, Ky.	1	.....	Superior, Wis.	3	.....
Lincoln, Nebr.	1	.....	Toledo, Ohio.	5	.....
Los Angeles, Cal.	1	.....	Washington, D. C.	1	.....
Memphis, Tenn.	1	.....		

TETANUS.

City Reports for Week Ended May 15, 1915.

Places.	Cases.	Deaths.	Places.	Cases.	Deaths.
El Paso, Tex.	.....	1	Newark, N. J.	.....	1
Lancaster, Pa.	1	.....	New York, N. Y.	.....	1
Los Angeles, Cal.	1	.....	Philadelphia, Pa.	.....	1
Mobile, Ala.	.....	1	Rock Island, Ill.	.....	1

TUBERCULOSIS.

See Diphtheria, measles, scarlet fever, and tuberculosis, page 1707.

TYPHOID FEVER.

State Reports for April, 1915.

Places.	New cases reported.	Places.	New cases reported.
Indiana:		North Dakota—Continued.	
Clark County.....	8	Hettinger County.....	1
Clinton County.....	1	Morton County.....	2
Delaware County.....	1	Pierce County.....	4
Elkhart County.....	1	Ramsey County.....	1
Franklin County.....	1	Ward County.....	1
Hamilton County.....	1	Williams County.....	1
Henry County.....	2	Total.....	14
Howard County.....	1	Texas:	
Jay County.....	1	Coleman County.....	2
Jefferson County.....	1	Dallas County.....	1
Johnson County.....	1	El Paso County.....	45
Kosciusko County.....	1	Guadalupe County.....	1
Lake County.....	17	Grayson County.....	1
Laporte County.....	6	La Salle County.....	3
Lawrence County.....	1	Midland County.....	1
Marion County.....	5	Navarro County.....	1
Morgan County.....	3	Palo Pinto County.....	1
Posey County.....	1	Travis County.....	1
Pulaski County.....	1	Webb County.....	3
Putnam County.....	1	Total.....	60
Shelby County.....	1	Washington:	
St. Joseph County.....	2	Chehalis County.....	2
Switzerland County.....	5	Lewis County.....	7
Union County.....	1	Lincoln County.....	1
Vanderburgh County.....	2	Spokane County—	
Wayne County.....	1	Spokane.....	2
Total.....	67	Whitman County.....	1
North Dakota:		Yakima County.....	2
Adams County.....	1	Total.....	15
Barnes County.....	2		
Grand Forks County.....	1		

TYPHOID FEVER—Continued.

City Reports for Week Ended May 15, 1915.

Places.	Cases.	Deaths.	Places.	Cases.	Deaths.
Allentown, Pa.	1		Memphis, Tenn.	3	
Altoona, Pa.		1	Milwaukee, Wis.	1	
Baltimore, Md.	7		Nashville, Tenn.	7	
Beaver Falls, Pa.	1		New Bedford, Mass.	2	
Boston, Mass.	4		Newburyport, Mass.	1	
Buffalo, N. Y.	3	1	New Castle, Pa.	1	
Camden, N. J.	4		New Haven, Conn.	1	
Canton, Ohio	1		New Orleans, La.	2	
Chelsea, Mass.	1		Newton, Mass.	1	
Chicago, Ill.	1	3	New York, N. Y.	14	4
Cincinnati, Ohio	4		Norfolk, Va.	3	
Cleveland, Ohio.	5	2	North Adams, Mass.	1	
Clinton, Mass.	1		Philadelphia, Pa.	9	3
Columbus, Ohio.	1	1	Pittsburgh, Pa.	3	
Danville, Ill.	1		Pittsfield, Mass.	1	
Dayton, Ohio.	7	1	Portland, Oreg.	2	
Detroit, Mich.	4	1	Providence, R. I.	1	
Dubuque, Iowa.	1		Reading, Pa.		1
Elgin, Ill.	1	1	Richmond, Va.	1	
El Paso, Tex.	2		Rochester, N. Y.	3	
Evansville, Ind.	1	1	Rutland, Vt.	1	
Grand Rapids, Mich.	1		Saginaw, Mich.	1	
Harrison, N. J.	1		St. Louis, Mo.	4	1
Hartford, Conn.	1		Salt Lake City, Utah.	6	
Haverhill, Mass.	1		San Francisco, Cal.	3	
Johnstown, Pa.	3		Somerville, Mass.	1	
Key West, Fla.		1	South Bend, Ind.	1	
Lancaster, Pa.	1		South Bethlehem, Pa.	1	
Lawrence, Mass.	3		Toledo, Ohio.	11	
Lima, Ohio.	1		Washington, D. C.	2	
Little Rock, Ark.	2		Wheeling, W. Va.	1	1
Los Angeles, Cal.	1	1	Worcester, Mass.	2	
Lynchburg, Va.	1		York, Pa.	3	
Lynn, Mass.	2		Zanesville, Ohio.	1	
Melrose, Mass.	1				

DIPHTHERIA, MEASLES, SCARLET FEVER, AND TUBERCULOSIS.

State Reports for April, 1915.

States.	Cases reported.		
	Diphtheria.	Measles.	Scarlet fever.
Indiana.	124	1,911	290
Iowa.	61		53
North Dakota.	51	220	21
Texas.	142	155	67
Washington.	23	130	38

DIPHTHERIA, MEASLES, SCARLET FEVER, AND TUBERCULOSIS—Contd.

City Reports for Week Ended May 15, 1915.

Cities.	Population as of July 1, 1914. (Es- timated by United States Census Bureau.)	Total deaths from all causes.	Diph- theria.		Measles.		Scarlet fever.		Tubercu- losis.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Over 500,000 inhabitants:										
Baltimore, Md.	579,590	189	19	1	66	1	26	3	33	18
Boston, Mass.	733,802	266	86	5	212	1	107	8	74	24
Chicago, Ill.	2,393,325	591	106	11	1,148	12	73	1	421	88
Cleveland, Ohio.	639,431	162	32	3	270	2	17	2	26	20
Detroit, Mich.	537,650	166	36	4	5	2	9		37	16
New York, N. Y.	5,333,539	1,472	370	32	2,214	30	336	12	530	154
Philadelphia, Pa.	1,657,810	509	55	4	879	8	28	2	153	49
Pittsburgh, Pa.	564,878	160	23	4	139	1	35		40	14
St. Louis, Mo.	734,667	177	61	3	361	3	10		43	12
From 300,000 to 500,000 inhabit- ants:										
Buffalo, N. Y.	454,112	124	35		55	1		1	41	23
Cincinnati, Ohio.	402,175	119	10		44		7		30	20
Los Angeles, Cal.	438,914	130	20	1	313	2	8		50	26
Milwaukee, Wis.	417,054		13		9		14		19	18
Newark, N. J.	389,106	106	18	1	17		6		31	14
New Orleans, La.	361,221	162	16	1	30	1			32	27
San Francisco, Cal.	448,502	137	35	2	9		4		12	12
Seattle, Wash.	313,029	53	2	1	16		2		14	
Washington, D. C.	353,378	115	2		104		24	1	26	18
From 200,000 to 300,000 inhabit- ants:										
Columbus, Ohio.	204,567	70	1		27		4		10	4
Jersey City, N. J.	293,921	78	17	3	137	1	35	1	32	8
Portland, Oreg.	260,601	49	5		8	1			9	6
Providence, R. I.	245,090	59	4	1	14	1	17		8	3
Rochester, N. Y.	241,518	62			36	2	7		6	4
From 100,000 to 200,000 inhabit- ants:										
Bridgeport, Conn.	115,289	30	3		2	1			9	4
Cambridge, Mass.	110,357	21	11	1	87	1	9		7	5
Camden, N. J.	102,465		1		20	1	1		4	
Dayton, Ohio.	123,794	29	2		10		17		5	5
Fall River, Mass.	125,443	26	2	1	2		3		15	
Grand Rapids, Mich.	123,227	30			12				3	1
Hartford, Conn.	107,038	31	7		7		3		4	5
Lowell, Mass.	111,004	29	1		7		5		5	4
Memphis, Tenn.	143,231	49	2		15		8		6	4
Nashville, Tenn.	114,899	38					1		3	6
New Bedford, Mass.	111,230		3		56		4		17	3
New Haven, Conn.	144,505		6		22		15		7	
Oakland, Cal.	183,002		1		1		1		2	3
Reading, Pa.	103,361	32			2		8		4	1
Richmond, Va.	134,917	35	1				2		6	3
Salt Lake City, Utah.	109,530	25			1		4		1	2
Springfield, Mass.	100,375	34	1		69		3		1	4
Toledo, Ohio.	184,125	47	2	1	32		6	1	27	6
Trenton, N. J.	106,831	29	3		2		2		5	2
Worcester, Mass.	157,732	39	5				6		9	2
From 50,000 to 100,000 inhabit- ants:										
Akron, Ohio.	80,291		5		4		16			
Allentown, Pa.	60,297		3		9		1			
Altoona, Pa.	56,553	10	1				2			
Atlantic City, N. J.	53,952				15					
Bayonne, N. J.	65,271						3		11	
Berkeley, Cal.	52,105		1		1		1		1	2
Binghamton, N. Y.	52,191	15	1		1					
Brockton, Mass.	64,043	14			13		3		2	
Canton, Ohio.	57,426	9	1		4		7			1
Charleston, S. C.	60,121	28								3
Duluth, Minn.	89,331	13			1		16		3	3
Evansville, Ind.	71,284	18	1	1	2		5		1	2
Harrisburg, Pa.	69,493	18	5				1		10	
Johnstown, Pa.	64,642	19	1		1				6	
Lawrence, Mass.	95,834	25	2		18		5		4	3
Little Rock, Ark.	53,811	13			2				1	
Lynn, Mass.	98,207	18	2	1	3		2		3	2
Manchester, N. H.	75,635	17	1	1			1		2	2
Mobile, Ala.	55,573	20							1	2
New Britain, Conn.	50,612		5						1	

DIPHTHERIA, MEASLES, SCARLET FEVER, AND TUBERCULOSIS—Contd.

City Reports for Week Ended May 15, 1915—Continued.

Cities.	Population as of July 1, 1914. (Es- timated by United States Census Bureau.)	Total deaths from all causes.	Diph- theria.		Measles.		Scarlet fever.		Tubercu- losis.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
From 50,000 to 100,000 inhabit- ants—Continued.										
Norfolk, Va.	86,540		1		16				1	
Passaic, N. J.	66,276	24	2		1		22	1	3	
Pawtucket, R. I.	56,901	6	1		4					
Sacramento, Cal.	62,717	10							3	3
Saginaw, Mich.	53,988	11							1	
Schenectady, N. Y.	90,503	18	1		6		6		4	4
Somerville, Mass.	83,881	15	6	1	23		5		2	
South Bend, Ind.	65,114	18			22					2
Springfield, Ill.	57,972	18	1		3					
Wilkes-Barre, Pa.	73,660	19	1		15		1		2	
Yonkers, N. Y.	93,383	25	3	1	16		4		4	1
From 25,000 to 50,000 inhabit- ants:										
Alameda, Cal.	26,330	6			5				1	1
Auburn, N. Y.	36,509	12					7			1
Aurora, Ill.	33,022	8			50					
Butler, Pa.	25,543	7								1
Butte, Mont.	41,781	13							4	3
Chelsea, Mass.	32,452	9	1		13		2		1	
Chicopee, Mass.	28,057	9			6		3			
Danville, Ill.	30,847	7	4		1					
Davenport, Iowa.	46,340						1			
Dubuque, Iowa.	39,428									1
East Orange, N. J.	39,852				1		4		1	
Elgin, Ill.	27,485	8			2		4			1
El Paso, Tex.	49,505	48	5		7	2	3			8
Everett, Mass.	37,381		8	2	30	1			1	1
Fitchburg, Mass.	40,507	11	1				6		3	2
Fort Smith, Ark.	27,316								1	
Galveston, Tex.	40,289	16	1							
Green Bay, Wis.	28,026		2				1		1	
Haverhill, Mass.	47,071	14	3		24		12		4	1
Kalamazoo, Mich.	45,842	19							5	
La Crosse, Wis.	31,367									1
Lancaster, Pa.	49,685						3		4	
Lexington, Ky.	38,819	14	1		24				1	1
Lima, Ohio.	33,904	8					1		1	2
Lincoln, Nebr.	45,643	12	1		27	1	3	1		
Lorain, Ohio.	34,360		4		1		1			1
Lynchburg, Va.	31,830	12							2	1
Madison, Wis.	29,469		1		3		2		1	2
Malden, Mass.	48,979	16	1		46		1		1	1
Medford, Mass.	25,240	3	1		21		1		1	
New Castle, Pa.	39,569		1				1			
Newport, Ky.	31,517	13					1		3	3
Newport, R. I.	29,154	7							1	1
Newton, Mass.	42,455	10	1		6				3	1
Niagara Falls, N. Y.	35,127	5	1							
Norristown, Pa.	30,265	10	1						3	1
Ogden, Utah.	29,528	8			1					
Orange, N. J.	31,968		3		1				2	
Pasadena, Cal.	40,880	11			30		1			2
Perth Amboy, N. J.	38,265		2		9		2			
Pittsfield, Mass.	36,531	7			17		1		3	
Portsmouth, Va.	37,569	4	1		8					
Racine, Wis.	44,528	10	2		3		3			1
Rock Island, Ill.	26,945	11								2
San Diego, Cal.	48,900		3				1		2	2
South Omaha, Nebr.	26,368									
Stuebenville, Ohio.	25,817	7								
Superior, Wis.	44,344	6	1							2
Taunton, Mass.	35,631	25					2			2
Waltham, Mass.	29,688	9	2		36		1		2	3
West Hoboken, N. J.	40,647	9	2		6		4		1	
Wheeling, W. Va.	42,817		4	1			7			1
Williamsport, Pa.	33,181	3	3		2		1			
Wilmington, N. C.	27,781	14							1	2
Woonsocket, R. I.	42,350		2				1			
York, Pa.	49,430		4						3	
Zanesville, Ohio.	29,949								1	

DIPHTHERIA, MEASLES, SCARLET FEVER, AND TUBERCULOSIS—Contd.

City Reports for Week Ended May 15, 1915—Continued.

Cities.	Population as of July 1, 1914. (Esti- mated by United States Census Bureau.)	Total deaths from all causes.	Diphth- theria.		Measles.		Scarlet fever.		Tubercu- losis.		
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	
Less than 25,000 inhabitants:											
Ann Arbor, Mich.....	14,948	8	3		1		1		5		
Biddeford, Me.....	17,475	7									
Braddock, Pa.....	20,935		3								
Cairo, Ill.....	15,392	4									
Clinton, Mass.....	13,075	3							2		
Coffeyville, Kans.....	15,982		1		2						
Concord, N. H.....	22,291	12					1				
Cumberland, Md.....	23,846	6					4		1		
Galesburg, Ill.....	23,570	3							1	1	
Kearney, N. J.....	21,967	6	2								
Key West, Fla.....	21,150	6									
Kokomo, Ind.....	19,694	9			10		2			1	
Marinette, Wis.....	14,610	3	1				2				
Melrose, Mass.....	16,887	3			27		3			2	
Montclair, N. J.....	24,782	4	1				1				
Morristown, N. J.....	13,033	5	1						1		
Muscatine, Iowa.....	17,074	1									
Nanticoke, Pa.....	21,756	8			8				1		
Newburyport, Mass.....	15,147	4									
New London, Conn.....	20,557	7	2		2		2			1	
Newport News, Va.....	20,446	4									
North Adams, Mass.....	22,019	6							1	1	
Northampton, Mass.....	19,766	6			1		1		1		
Phoenix, Ariz.....	16,870	4					1			2	
Plainfield, N. J.....	22,755	7	1		7				1	1	
Rutland, Vt.....	14,417	4	3				3				
Saratoga Springs, N. Y.....	12,813	5			47				1		
South Bethlehem, Pa.....	22,840				1				1		
Steelton, Pa.....	15,126	1					1				
Wilkinsburg, Pa.....	21,701	7							1		

FOREIGN REPORTS.

AUSTRIA-HUNGARY.

Typhus Fever.

Typhus fever has been notified in Austria-Hungary as follows: Week ended March 27, 1915, 477 cases; week ended April 10, 1915, 203 cases. The cases occurred in Austria, and were distributed in 10 Provinces.

BRAZIL.

Leprosy—São Paulo.

During the week ended April 4, 1915, a death from leprosy was notified at São Paulo.

CHINA.

Plague-Infected Rats—Shanghai.

During the three weeks ended April 24, 1915, out of 871 rats examined at Shanghai, 12 rats were found plague infected.

CUBA.

Plague—Habana.

A fatal case of plague, occurring in an old focus, was notified at Habana June 2, 1915.

Communicable Diseases—Habana.

Communicable diseases were notified at Habana during the 10-day period ended May 10, 1915, as follows:

Diseases.	New cases.	Deaths.	Remain- ing under treat- ment May 10, 1915.	Diseases.	New cases.	Deaths.	Remain- ing under treat- ment May 10, 1915.
Diphtheria.....	9	.....	9	Plague.....	3	1	7
Leprosy.....	.....	.....	251	Scarlet fever.....	2	1	9
Measles.....	2	.....	6	Typhoid fever.....	10	4	40
Paratyphoid fever.....	.....	.....	3	Varicella.....	13	.....	19

GERMANY.

Typhus Fever.

Typhus fever has been notified in Germany as follows: Week ended April 10, 1915, 19 cases; week ended April 24, 1915, 28 cases. The cases occurred among German soldiers. The disease was also present during the same periods among Russian prisoners of war in camps situated in 11 districts and in Saxony and Saxe-Coburg-Gotha.

MEXICO.

Smallpox—Frontera.

Smallpox was reported present at Frontera May 17, 1915. On May 24, 1915, the disease was reported to be increasing in prevalence

SOCIETY ISLANDS.

Rat Infestation—Leprosy—Tahiti.

Under date of April 17, 1915, the presence of rats in large numbers was reported in the port of Papeete and throughout the island of Tahiti.

The establishment in the vicinity of Papeete of a leper colony with 70 inmates was reported.

TURKEY IN EUROPE.

Measures Against Saloniki.

By order of the superior council of health of Constantinople, arrivals from Saloniki were made subject, from April 14, 1915, to disinfection, deratization, and 5 days' quarantine detention, including the period of duration of the voyage, these measures to be applied at the lazaretto at a Turkish port.

UNION OF SOUTH AFRICA.

Status of Plague—Origin of Outbreak—Cape Province.

During the period from March 30 to April 5, 1915, 7 cases of plague were notified in the Cape Province. The cases occurred in the district of Cradock, a new focus, situated in the northern part of the Province. In addition, a death from plague was notified April 10, 1915, at Port Elizabeth, in the person of a native arrived from Keiskama Hoek.

Plague was discovered to be present, in September, 1914, on the Fairview farm in Tarka district, 14 cases being notified, of which 13 were in natives. Outbreaks of the disease occurred later in other

parts of the Province. The following is a summary of the cases notified from February 5 to April 10, 1915:

Districts.	Cases.	Deaths.	Districts.	Cases.	Deaths.
Cradock.....	7	1	Queenstown.....	13	8
Maraisburg.....	3	3	Tarka.....	11	6
Molteno.....	1	1	Total.....	25	19

TYPHUS FEVER.

Reports Received During Week Ended June 4, 1915.¹

Places.	Date.	Cases.	Deaths.	Remarks.
Austria-Hungary.....	Mar. 21-27.....	477		In 10 Provinces of Austria.
Do.....	Apr. 4-10.....	203		Do.
Vienna.....	Apr. 4-17.....	14		
Dutch East Indies:				
Java—				
Batavia.....	Apr. 4-10.....	4	1	Death in a European.
Germany.....	do.....	19		Among German soldiers. 18 cases; 1 case in a person connected with prison camp service. Present among Russian prisoners of war in camps in 10 districts and in Saxony and Saxe-Coburg-Gotha.
Do.....	Apr. 18-24.....	28		Among German soldiers. Present among Russian prisoners in camps in 11 districts and in Saxony and Saxe-Coburg-Gotha.
Great Britain:				
Dundee.....	May 2-8.....	3		
Glasgow.....	May 6-12.....	1		
Japan:				
Yokohama.....	Apr. 27-May 3.....	7		
Mexico:				
Aguaascalientes.....	May 9-16.....		2	
Netherlands:				
Flushing.....	May 1-8.....	1		
Russia:				
Moscow.....	Mar. 29-Apr. 4.....	323	40	
Petrograd.....	Apr. 4-10.....	1		
Turkey in Asia:				
Adana.....	Apr. 4-24.....			Present.
Tarsus.....	do.....			Do.

Reports Received from Jan. 1 to May 28, 1915.

Austria-Hungary.....	Aug.-Dec. 31, 1914	279		
Do.....	Jan. 1-Mar. 20.....	3,466		
Austria.....	Mar. 28-Apr. 3.....	431		
Vienna.....	Apr. 3-10.....	16		
Azores:				
Terceira.....	Jan. 31-Feb. 6.....			Present.
Bermuda:				
Warwick Camp.....	Mar. 14-20.....	1		Among troops.
China:				
Antung.....	Feb. 1-7.....		1	
Hankow.....	Mar. 21-27.....	1		On steamship from Shanghai.
Harbin.....	Jan. 25-Feb. 7.....	1		
Tientsin.....	Jan. 23-30.....			Present.
Dutch East Indies:				
Java—				
Batavia.....	Dec. 19-26.....	5		Among foreigners.
Do.....	Mar. 14-Apr. 3.....	28	4	Present in surrounding country.
Egypt:				
Alexandria.....	Dec. 25-31.....	2		Jan. 15-21: Present.
Do.....	Feb. 12-Apr. 22.....	178	25	
Cairo.....	Dec. 23.....		3	Jan. 8-14: Present.
Do.....	Jan. 21-Apr. 8.....		102	
Port Said.....	Mar. 5-11.....		1	Feb. 11-18: Present.

¹ From medical officers of the Public Health Service, American consuls, and other sources.

TYPHUS FEVER—Continued.

Reports Received from Jan. 1 to May 28, 1915—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Germany.....	Feb. 14-Apr. 17...	139	.....	Among German soldiers. Present among Russian prisoners of war in camps in 10 Government districts and in Saxony and other divisions of the Empire.
Great Britain and Ireland:				
Dublin.....	Feb. 7-20.....	6	.....
Do.....	Mar. 28-Apr. 3.....	.....	1	
Glasgow.....	Mar. 11-18.....	2	.....
Greece:				
Athens.....	Apr. 12-18.....	.....	.....	Present.
Do.....	Apr. 19-25.....	.....	1	
Saloniki.....	Dec. 20-26.....	5	5	
Do.....	Dec. 27-Jan. 2.....	.....	5	Jan. 17-23: Present.
Do.....	Feb. 6.....	1	.....	From Belgrade.
Do.....	Feb. 21-Mar. 7.....	.....	6	
Do.....	Apr. 3-17.....	.....	4	
Guatemala:				
Guatemala City.....	Mar. 21-27.....	.....	.....	Present.
Italy:				
Florence.....	Nov. 1-30.....	17	2	
Do.....	Dec. 1-31.....	2	.....
Do.....	Jan. 1-31.....	4	.....
Do.....	Feb. 1-28.....	3	3	
Do.....	Mar. 1-31.....	4	3	
Venice.....	Jan. 2-9.....	8	1	
Japan:				
Hakodate.....	Feb. 1-Apr. 3.....	15	3	Mar. 6: Still present.
Tokyo.....	Apr. 13-26.....	18	.....
Mexico:				
Aguascalientes.....	Jan. 17-23.....	.....	.....	Present.
Do.....	Mar. 1-7.....	.....	.....	Do.
Do.....	May 3-9.....	.....	2	
Russia:				
Moscow.....	Jan. 2-Feb. 20.....	64	6	
Do.....	Feb. 21-Mar. 21.....	476	34	
Odessa.....	Feb. 21-Mar. 6.....	6	.....
Petrograd.....	Dec. 19-28.....	8	2	
Do.....	Dec. 25-Apr. 3.....	62	11	
Vladivostok.....	Dec. 20-28.....	5	1	
Do.....	Jan. 14-Mar. 8.....	3	3	
Servia.....	Feb. 6.....	.....	.....	Epidemic. About 500 deaths daily.
Spain:				
Madrid.....	Mar. 1-31.....	5	5	
Switzerland:				
Zurich.....	Apr. 25-May 1.....	1	.....
Turkey in Asia:				
Erzeroum.....	Apr. 10.....	.....	.....	Military center. Epidemic.
Erzinjan.....	.....do.....	.....	.....	Do.
Harput.....	Feb. 1-27.....	.....	.....	Present.
Do.....	Mar. 1-31.....	.....	.....	Do.
Jaffa.....	Jan. 31-Feb. 6.....	.....	.....	Do.
Do.....	Mar. 28-Apr. 3.....	6	.....
Mersina.....	Mar. 7-13.....	.....	.....	Do.
Samsoun.....	Mar. 4.....	.....	.....	Present in military hospital.
Trebizond.....	Dec. 13-Feb. 27.....	.....	.....	Many cases among troops, with high fatality rate.
Do.....	Apr. 10.....	.....	.....	Epidemic.

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX.

Reports Received During Week Ended June 4, 1915.¹

CHOLERA.

Places.	Date.	Cases.	Deaths.	Remarks.
Austria-Hungary:				
Austria.....	Mar. 21-27.....	2	.....	In prison camp, Bohemia.
Do.....	Apr. 4-10.....	1	.....	In prison camp, Silesia.
Bosnia-Herzegovina.....	Mar. 14-20.....	11	6	
Do.....	Mar. 28-Apr. 3.....	9	.....
Croatia-Slavonia.....	Mar. 16-22.....	4	1	
Do.....	Mar. 29-Apr. 5.....	2	2	
Esseg, city.....	Mar. 9-15.....	4	.....	Among military.
Hungary.....	Mar. 22-Apr. 4.....	7	2	Soldiers and prisoners of war.
				In scene of war, in Balkan territory, among military: Mar. 22-Apr. 4: Cases, 6; 1 death.
Borneo:				
Membakut estate.....	To Mar. 31.....	6	4	West coast.
Dutch East Indies:				
Java—				
Batavia.....	Apr. 4-10.....	5	3	Natives.
Indo-China:				
Saigon.....	.....do.....	66	29	
Philippine Islands:				
Manila.....	.....do.....	1	1	

PLAGUE.

Cuba:				
Habana.....	June 2.....	1	1	
Dutch East Indies:				
Java—				
Surabaya.....	Mar. 28-Apr. 3.....	7	7	City and district.
Indo-China:				
Saigon.....	Apr. 4-10.....	2	.....
Japan:				
Taiwan—				
Kagi.....	Apr. 18-24.....	8	5	
Peru:				
Salaverry.....	Apr. 12-25.....	3	3	
Straits Settlements:				
Singapore.....	Mar. 21-27.....	1	1	
Turkey in Asia:				
Bagdad.....	Mar. 15-21.....	49	30	
Do.....	Mar. 29-Apr. 4.....	67	56	
Union of South Africa:				
Cape Province—				
Cradock, district.....	Mar. 30-Apr. 5.....	7	.....
Port Elizabeth.....	Apr. 10.....	.....	1	Native from Keiskama Hoek.

SMALLPOX.

Arabia:				
Aden.....	Apr. 8-14.....	7	7	
Australia:				
New South Wales—				
Cessnock.....	Apr. 9-15.....	2	.....
Austria-Hungary:				
Budapest.....	Apr. 4-10.....	176	.....	In 7 provinces of Austria.
Do.....	Mar. 27-Apr. 3.....	30	.....	Civil population. One case military.
Fiume.....	Apr. 10-17.....	31	.....
Vienna.....	Apr. 12-25.....	4	.....
	Apr. 10-24.....	127	23	
Canada:				
Manitoba—				
Winnipeg.....	May 9-15.....	2	.....
Ontario—				
Toronto.....	.....do.....	3	.....
Quebec—				
Montreal.....	.....do.....	2	.....
China:				
Nanking.....	Apr. 10-24.....	.....	.....	Present.
Shanghai.....	Apr. 4-24.....	3	13	Cases in foreign population; deaths in natives.

¹ From medical officers of the Public Health Service, American consuls, and other sources.

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.**Reports Received During Week Ended June 4, 1915—Continued.****SMALLPOX—Continued.**

Places.	Date.	Cases.	Deaths.	Remarks.
Dutch East Indies:				
Java.....	Apr. 4-10.....	25	6	West Java.
Batavia.....	.....do.....	6	2	
France:				
Nantes.....	Apr. 30-May 2....	2		
Germany.....	Apr. 18-24.....	5		Allenstein, 2 cases; Berlin, 1 case; Danzig district, 1 case; Oppeln district, 1 case.
Great Britain:				
South Shields.....	.....do.....	1		
India:				
Rangoon.....	Mar. 27-Apr. 3....	14		
Indo-China:				
Saigon.....	.....do.....	2	1	
Japan:				
Taiwan, island of.....	Apr. 18-24.....	3	5	
Mexico:				
Aguascalientes.....	May 9-16.....		1	
Frontera.....	.....do.....			May 17, present; May 24, increasing.
Monterey.....	Apr. 26-May 2....	5		
Progreso.....	May 2-8.....	6	1	
Tampico.....	Apr. 21-May 10....		11	
Vera Cruz.....	Apr. 25-May 1....	9	8	
Do.....	May 3-9.....	11	7	
Portugal:				
Lisbon.....	Apr. 18-May 1....	7		
Russia:				
Moscow.....	Mar. 22-Apr. 4....	37	13	
Petrograd.....	Apr. 4-10.....	41	16	
Riga.....	Mar. 21-Apr. 24....	81		Feb. 1-28, 1915: Cases, 60; deaths, 17.
Spain:				
Valencia.....	May 2-8.....	32	4	
Turkey in Asia:				
Beirut.....	Mar. 27-Apr. 10....	11	5	
Do.....	Apr. 18-24.....	5	2	
Tripoli.....	Apr. 4-17.....	41	4	

Reports Received from Dec. 26, 1914, to May 28, 1915.**CHOLERA.**

Places.	Date.	Cases.	Deaths.	Remarks.
Austria-Hungary:				
Austria.....				Total Sept. 15-Dec. 5: Cases, 3,467; deaths, 937. Total Jan. 4-Mar. 20: 151 cases.
Do.....				Total Nov. 18-Dec. 22: Cases, 741; deaths, 133.
Bohemia.....				Total Sept. 23-Dec. 5: Cases, 176; deaths, 56.
Coast land—				
Trieste.....	Nov. 15-21.....	5		
Galicia.....				Total Sept. 23-Dec. 5: Cases, 2,047; deaths, 793.
Kracow.....	Oct. 4-Dec. 5....	109	4	
Liskow.....	Sept. 23-Nov. 7....	355	185	
Przemsyl.....	Nov. 1-14.....	132	3	
Lower Austria.....				Total Sept. 1-Dec. 5: Cases, 473; deaths, 67.
Vienna.....	Sept. 1-Jan. 20....	390	42	
Do.....	Mar. 7-Apr. 3....	2		
Moravia.....				Total Sept. 15-Dec. 5: Cases, 362; deaths, 93.
Brunn.....	Sept. 15-Nov. 21....	18	3	
Silesia.....				Total Sept. 23-Dec. 5: Cases, 288; deaths, 39.
Styria.....				Sept. 23-28: Cases, 55; deaths, 18.
Graz.....	Oct. 3-Nov. 14....	10		
Upper Austria.....	Oct. 4-Nov. 7....	3		
Bosnia-Herzegovina.....	Jan. 4-Mar. 27....	131	63	Total Oct. 4-10: Case, 1.
Croatia-Slavonia.....	Dec. 31-Mar. 15....	483	169	Total Oct. 4-10: Case, 1; death, 1.
Hungary.....	Dec. 31-Mar. 14....	571	162	Total Sept. 15-Nov. 30: Cases, 3,024; deaths not yet reported.
Do.....				Total Nov. 18-Dec. 22: Cases, 452; deaths not reported.
Budapest.....	Dec. 25-Feb. 13....	22	4	
Fiume.....	Jan. 25-Feb. 7....	3	1	

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received from Dec. 26, 1914, to May 28, 1915—Continued.

CHOLERA—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Borneo:				
Membakut estate.....	Mar. 2-19.....	7		West coast.
Simporna.....	Jan. 1-Feb. 8.....	60	53	Mar. 13, still present.
Do.....	Mar. 2-19.....		14	
Ceylon:				
Colombo.....	Sept. 5.....	1	1	
China:				
Nanking.....	Nov. 15-21.....			Present.
Wuchow.....	Nov. 27.....			Do.
Dutch East Indies:				
Banca—				
Muntok.....	Dec. 6-12.....	11	7	
Celebes—				
Menado.....	Oct. 18-Dec. 5.....	425	409	
Java—				
Batavia.....	Oct. 25-Dec. 23.....	361	343	May 4, epidemic.
Do.....	Mar. 14-27.....	5	4	
Sumatra—				
Lampung.....	Nov. 8-1.....	27	7	
Mengals.....	Oct. 18-Nov. 7.....	65	69	
Palembang.....	Oct. 18-Dec. 19.....	175	147	
Pencoulen district.....	Oct. 25-31.....	88	32	
Telok Betong.....	Nov. 14-Dec. 12.....	47	44	
Germany.....				Total, Nov. 8-Jan. 16: Cases, 54.
Do.....	Feb. 21-Mar. 3.....	17	1	In prison camps.
Brandenburg.....	Dec. 6-23.....	4		Vicinity of Frankfurt on the Oder.
Torgau.....	Jan. 5-16.....	1		At Birnbaum
Posen.....	Dec. 20-26.....	2		
Zirka.....	Jan. 5-16.....	5		
Silesia.....	Nov. 8-Dec. 26.....	46		In 23 localities.
Rosenberg.....	Jan. 5-16.....	1		
India:				
Bombay.....	Nov. 1-Apr. 10.....	13	5	
Calcutta.....	Nov. 1-28.....		42	Oct. 25-31: Deaths, 17. Not previously reported.
Do.....	Mar. 14-20.....		124	
Madras.....	Nov. 8-Apr. 3.....	180	130	
Madura district.....	Jan. 17-Mar. 6.....	622	403	
Rangoon.....	Sept. 1-Dec. 31.....	6	5	
Do.....	Feb. 28-Mar. 6.....	1	1	
Indo-China.....				Jan. 1-Aug. 31: Cases, 250 deaths, 148. Aug. 1-31: Cases, 18; deaths, 15.
Anam—				
Binh-Dinh.....	Oct. 1-Nov. 30.....	84	42	
Cambodia—				
Pnum Penh.....	Aug. 1-Oct. 31.....	2	1	
Cochin-China—				
Baria.....	Aug. 1-31.....	6	6	And vicinity, Nov. 3-23: Cases, 20; deaths, 10.
Cantho.....	Oct. 1-31.....	2		
Cholon.....	Aug. 1-Nov. 30.....	70	49	Total Jan. 1-Dec. 20: Cases, 151; deaths, 79.
Saigon.....	Aug. 1-Mar. 27.....	857	463	
Laos—				
Pakse.....	Aug. 1-31.....	1	1	
Tonkin—				
Ninh-Binh.....	Oct. 1-31.....	11	2	
Japan.....				Total Jan. 1-Dec. 31: 5 cases, 4 deaths.
Kyoto fu.....	Oct. 1-31.....	1	1	
Philippine Islands:				
Manila.....	Oct. 25-Jan. 30.....	66	37	
Do.....	Feb. 7-Mar. 27.....	37	22	
Russia:				
Moscow.....	Nov. 8-Jan. 23.....		4	
Siam:				
Bangkok.....	Sept. 27-Mar. 20.....		13	
Straits Settlements:				
Singapore.....	Oct. 4-Jan. 30.....	5	5	

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.**Reports Received from Dec. 26, 1914, to May 28, 1915—Continued.****YELLOW FEVER.**

Places.	Date.	Cases.	Deaths.	Remarks.
Brazil:				
Bahia.....	Jan. 24-Feb. 20....	3	1	
Rio de Janeiro.....	Dec. 13-23.....	2	1	
Ecuador:				
Guayaquil.....	Nov. 1-Mar. 31....	5	3	
French Guiana:				
St. Jean du Maroni.....	Sept. 23-Oct. 10....	15	8	At the penal station.
Mexico:				
Merida.....	Jan. 25.....	1	1	
Do.....	Mar. 17.....	1	1	
Do.....	Apr. 10.....	2	.....	In children. Mild type.
Venezuela:				
Caracas.....	Dec. 31.....	1	.....

PLAGUE.

Places.	Date.	Cases.	Deaths.	Remarks.
Bahrein (in Persian Gulf).....	Dec. 29.....	.....	.....	Present.
Brazil:				
Bahia.....	Nov. 16-Feb. 27....	20	16	
Do.....	Apr. 4-10.....	1	1	Mar. 21-27: Cases, 4; deaths, 2.
Pernambuco.....	Oct. 11-Dec. 31....	.....	12	
Rio de Janeiro.....	Dec. 20-Jan. 5.....	2	.....
Do.....	May 20.....	1	.....
Ceylon:				
Colombo.....	Oct. 25-Mar. 27....	68	63	
China:				
Canton.....	.....	.....	.....	June 12-July 12: Cases, 325.
Changehow.....	Apr. 6.....	.....	.....	Present.
Hongkong.....	Dec. 28-Apr. 10....	3	2	Chinese.
Shanghai.....	Dec. 6-Jan. 2.....	.....	3	Among natives.
Cuba:				
Guanabacoa.....	May 13.....	1	.....
Havana.....	Feb. 9-May 11....	15	6	
Pinar del Rio.....	Apr. 9-10.....	2	1	
Dutch East Indies:				
Java.....	Jan. 20-Mar. 27....	951	846	East Java.
Provinces.....	.....	.....	.....	Total, Oct. 1-Nov. 30: Cases,
Kediri.....	Oct. 1-Nov. 30....	730	678	2,562; deaths, 2,278.
Madiun.....	do.....	128	110	
Paseroean.....	do.....	1,405	1,211	
Surabaya.....	do.....	299	279	
Do.....	Dec. 13-Mar. 27....	191	177	
Ecuador:				
Duran.....	Nov. 1-Jan. 31....	10	4	
Guayaquil.....	Nov. 1-Mar. 31....	365	149	
Milagro.....	Dec. 1-31.....	1	1	
Sanborondon.....	Nov. 1-Dec. 31....	4	3	
Egypt:				
Alexandria.....	Nov. 5-28.....	1	1	Total, Jan. 1, 1914-Jan. 28, 1915:
Do.....	Apr. 9-15.....	2	.....	Cases, 225; deaths, 116.
Assiout, Province.....	Jan. 28-Apr. 22....	19	7	
Fayoum, Province.....	Apr. 14.....	1	1	
Gizeh, Province.....	Apr. 1-8.....	7	7	
Port Said.....	Oct. 22-Dec. 24....	9	7	Jan. 1-Dec. 18: Cases, 44.
Greece.....	.....	.....	.....	Sept. 12, present in Drama and
Piræus.....	Jan. 17-27.....	1	.....	Kavala.
Saloniki.....	Apr. 4-10.....	5	7	
India:				
Bassein.....	Jan. 4-Dec. 5.....	13	10	Not previously reported.
Bombay.....	Nov. 1-Apr. 10....	125	109	
Karachi.....	Nov. 8-Apr. 10....	80	65	
Madras.....	Nov. 22-Dec. 12....	6	6	
Madras Presidency.....	Jan. 17-29.....	299	211	
Do.....	Feb. 7-Mar. 6.....	445	323	
Rangoon.....	Sept. 1-Dec. 31....	125	117	
Do.....	Feb. 28-Mar. 27....	.....	63	Feb. 1-28, 1915: Cases, 54; deaths,
				52.

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.**Reports Received from Dec. 26, 1914, to May 28, 1915—Continued.****PLAGUE—Continued.**

Places.	Date.	Cases.	Deaths.	Remarks.
Indo-China.....				Jan. 1-Aug. 31: Cases, 1,780; deaths, 1,413. Aug. 1-3: Cases, 155; deaths, 121.
Anam—				
Phanitet.....	Aug. 1-31.....	4	1	
Do.....	Oct. 1-Nov. 30.....	2	1	
Phanrang.....	Aug. 1-Nov. 30.....	12	10	
Cambodia—				
Kompong-Spen.....	Nov. 1-30.....	5	3	
Phum Penh.....	Aug. 1-Nov. 30.....	88	84	
Stung-Treng.....	Oct. 1-Nov. 30.....	4	3	
Cochin China—				
Cantho.....	Nov. 1-30.....	3		
Cholon.....	Aug. 1-Nov. 30.....	39	14	
Gladinh.....	Oct. 1-31.....	1		
Saigon.....	Aug. 1-31.....	23	15	
Do.....	Jan. 4-Mar. 27.....	40	19	And vicinity Nov. 3-30: Cases, 5.
Thudaumot.....	Nov. 1-30.....	2	1	
Kouang-Techeou-Wan.....	Aug. 1-Nov. 30.....	70	70	
Tonkin—				
Tong-San.....	Nov. 1-30.....	25	25	
Japan.....				Total, Jan. 1-Dec. 31: 485 cases; 110 deaths.
Chiba-ken—				
Komikawa.....	Jan. 1-Dec. 31, 1914.....	6	6	
Moriyama.....	do.....	5	4	
Ibaraki-ken—				
Isahaya.....	Jan. 1-Dec. 31, 1914.....	1	1	
Kagi.....	Jan. 24-Apr. 17.....	47	39	
Kanagawa-ken—				
Hodogaya.....	Jan. 24-Feb. 13.....	8	6	Including reports previously published in P. H. R.
Kawasaki.....	do.....	1	1	
Ohno-mura.....	do.....	9	8	
Tijima-mura.....	do.....	5	4	
Yokohama.....	do.....	1	1	Do.
Taiwan (Formosa).....	do.....	303	275	Do.
Tokyo-fu.....	do.....	47	29	Do.
Tokyo.....	Dec. 29-Jan. 4.....	1	1	
Libya (Tripoli).....				Present in Derna and Marsa-Susa among native laborers.
Mauritius.....	Nov. 6-Jan. 14.....	74		
Persia:				
Belessavar.....	Oct. 30-Nov. 9.....	80	80	On Caspian coast.
Kasri Shireen.....	Dec. 12.....	1		
Peru:				
Departments—				
Aucachs.....				Total year 1914: Cases, 34; deaths, 20.
Arequipa.....				Total year 1914: Cases, 54; deaths, 24.
Cajamarca.....				Total year 1914: Cases, 16; deaths, 7.
Callao.....				Total year 1914: Cases, 14; deaths, 8.
La Libertad.....				Total year 1914: Cases, 335; deaths, 176.
Lambayeque.....				Total year 1914: Cases, 1,907; deaths, 47.
Lima.....				Total year 1914: Cases, 106; deaths, 48.
Piura.....				Total year 1914: Cases, 94; deaths, 56.
Barranco.....	Mar. 1-Apr. 4.....	1		
Callao.....	Nov. 16-Apr. 4.....	13	2	
Catacoas.....	do.....	35	3	
Chilayo.....	do.....	6	15	
Chocope.....	Nov. 16-Jan. 3.....			Present.
Cocachacra.....	Mar. 1-Apr. 4.....	1		
Ferrenale.....	Nov. 16-Jan. 31.....	6		
Guadalupe.....	Jan. 4-31.....	1	1	
Huancayo.....	do.....	1	1	
Lambayeque.....	Nov. 16-Apr. 11.....	18	5	
Lima (city).....	do.....	20	2	
Lima (country).....	Nov. 16-Apr. 4.....	10	1	
Lurigancho.....	Mar. 1-Apr. 4.....	1		
Lurin.....	do.....	1		
Mollendo.....	Nov. 16-Apr. 4.....	24		

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.**Reports Received from Dec. 26, 1914, to May 28, 1915—Continued.****PLAGUE—Continued.**

Places.	Date.	Cases.	Deaths.	Remarks.
Peru—Continued.				
Pacasmayo.....	Nov. 16-Jan. 3.....	1	.....
Plura.....	Nov. 16-Apr. 4.....	25	7	
Salaverry.....	Nov. 16-Jan. 3.....	4	.....
San Pedro.....	Nov. 16-Apr. 11.....	26	.....
Trujillo.....	Nov. 16-Apr. 4.....	57	8	
Russia:				
Moscow.....	Dec. 6-Feb. 13.....	9	2	
Senegal:				
Dakar.....	Dec. 5.....	.....	.....	Present.
Siam:				
Bangkok.....	Dec. 26-Mar. 20.....	.....	14	
Straits Settlements:				
Singapore.....	Nov. 1-Mar. 6.....	28	21	
Turkey in Asia:				
Bagdad.....	Nov. 1-Dec. 3.....	11	9	
Do.....	Dec. 25-Jan. 5.....	12	8	
Do.....	Jan. 12-Mar. 6.....	314	178	
Union of South Africa:				
Queenstown.....	Feb. 5-Mar. 29.....	26	17	Corrected statement: To Mar. 23, cases, 28; deaths, 18.
Zanzibar.....	Oct. 25-31.....	2	3	

SMALLPOX.

Arabia:				
Aden.....	Nov. 5-Apr. 7.....	42	44	Present.
Muttra.....	Feb. 7-13.....	.....	.....
Argentina:				
Rosario.....	Oct. 1-31.....	.....	1	
Australia:				
New South Wales—				
Aberdare.....	Mar. 19-25.....	2	.....	Total, Nov. 13-19: Cases, 7 in the metropolitan area and 2 in the country districts.
Cessnock.....	Mar. 5-Apr. 8.....	6	.....
Newcastle.....	Jan. 22-28.....	2	.....
Penrith.....	Dec. 11-17.....	1	.....
Sydney.....	Dec. 11-Mar. 25.....	40	.....
Queensland—				
Brisbane.....	.....	.....	.....	Nov. 19, in Colmslie quarantine station, 1 case from s. s. Kano Na from Melbourne, via Sydney.
South Australia.....	Jan. 3-16.....	1	.....
Austria-Hungary:				
Austria.....	Mar. 28-Apr. 3.....	153	.....	Total, Feb. 28-Mar. 6, 292 cases.
Prague.....	Jan. 17-23.....	1	.....
Vienna.....	Oct. 31-Jan. 9.....	141	15	
Do.....	Jan. 17-Apr. 10.....	875	198	
Hungary—				
Budapest.....	Jan. 31-Mar. 20.....	232	.....
Fiume.....	Dec. 6-Feb. 7.....	4	2	
Belgium:				
Antwerp.....	Mar. 23-29.....	1	.....
Brazil:				
Pernambuco.....	Oct. 1-Dec. 31.....	.....	57	
Do.....	Jan. 18-31.....	.....	4	
Rio de Janeiro.....	Nov. 1-Jan. 9.....	735	215	
Do.....	Feb. 7-Apr. 10.....	87	30	
Sao Paulo.....	Nov. 9-15.....	2	.....
British Honduras:				
Belize.....	Apr. 16-22.....	1	.....	Isolated 3 miles from Belize.
Bulgaria:				
Sofia.....	June 30-Nov. 28.....	121	.....
Canada:				
Alberta—				
Calgary.....	Apr. 10-17.....	1	.....
British Columbia—				
Vancouver.....	Feb. 8-Mar. 20.....	4	.....
Manitoba—				
Winnipeg.....	Jan. 24-May 1.....	13	.....
Ontario—				
Hamilton.....	Jan. 1-Apr. 30.....	9	.....
Sarnia.....	Dec. 13-Mar. 13.....	6	.....
Toronto.....	Dec. 6-May 8.....	61	1	
Windsor.....	Jan. 17-May 1.....	5	.....	Jan. 13: Cases, 4 from Grand Trunk ferryboat Landsdowne.

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.**Reports Received from Dec. 26, 1914, to May 28, 1915—Continued.****SMALLPOX—Continued.**

Places.	Date.	Cases.	Deaths.	Remarks.
Canada—Continued.				
Quebec—				
Montreal.....	Dec. 28-Apr. 24....	20		
Quebec.....	Dec. 13-Jan. 16....	5		
Canary Islands:				
Teneriffe—				
Santa Cruz.....	Dec. 6-26.....		2	
Ceylon:				
Colombo.....	Oct. 25-Mar. 27....	201	58	Jan. 14, 1 case from s. s. Knight Templar; fatal. Feb. 6, 1 case from s. s. Chindwara.
China:				
Foochow.....	Mar. 6-Apr. 10....			Present.
Hankow.....	Feb. 7-13.....	1		
Harbin.....	Jan. 11-Mar. 14....	17		
Hongkong.....	Nov. 22-Apr. 3....	17	14	
Nanking.....				Feb. 20, present. Mar. 21-Apr. 10, present.
Newchwang.....	Feb. 20.....			Present.
Shanghai.....	Nov. 9-Apr. 10....	47	112	Deaths among natives.
Tientsin.....	Dec. 6-12.....		1	
Do.....	Mar. 7-13.....		1	
Cuba:				
Guaymas.....	Jan. 12-Feb. 10....	7	1	
Habana.....	Mar. 8-21.....	1	1	Mar. 15: 1 case on steamship Morro Castle.
Dutch East Indies:				
Borneo.....	Nov. 8-14.....	50	30	Oct. 18-24: Cases, 112; deaths, 44, mainly in Pontianak.
Java.....	Jan. 8-Mar. 6.....	586	208	In the western part, including
Do.....	Mar. 28-Apr. 3....	123	31	Batavia. Feb. 18-Mar. 20:
Batavia.....	Oct. 18-Nov. 21....	166	44	Cases, 155; deaths, 45.
Do.....	Jan. 8-Apr. 3....	114	39	
Surabaya.....	Nov. 1-7.....	1		
Sumatra—				
Tepanodi district.....	Dec. 5-29.....	6	2	
Egypt:				
Alexandria.....	Nov. 19-Apr. 22....	115	29	
Cairo.....	Dec. 3-Apr. 8.....	43	7	
France:				
Havre.....	Dec. 20-26.....	1		
Marseille.....	Jan. 1-Mar. 31....		2	
Paris.....	Nov. 15-Dec. 26....	4	2	
Do.....	Mar. 20-27.....	1		
Roubaix.....	Jan. 1-31.....		27	
Germany.....	Apr. 11-17.....	2		Nov. 15-Dec. 19: Cases, 14. Jan. 10-16: 11 cases.
Strassburg.....	Jan. 1-Feb. 28....	10	1	
Great Britain:				
Cardiff.....	Nov. 30-Dec. 5....	5		
Leeds.....	Apr. 25-May 1....	1		
Liverpool.....	Dec. 19.....	1		
London.....	Jan. 31-Apr. 10....	28	3	
Greece:				
Kavala.....	Nov. 22-Mar. 27....	11		
Kilkish.....	Nov. 22-Feb. 27....	1		
Patras.....	Nov. 23-Feb. 21....		18	Jan. 31: Epidemic.
Saloniki.....	Nov. 15-Apr. 10....	86	64	
Guatemala:				
Guatemala.....	Mar. 21-Apr. 5....			Present.
India:				
Bombay.....	Nov. 1-Apr. 3.....	234	111	
Calcutta.....	Oct. 25-Nov. 28....		37	
Do.....	Mar. 14-20.....		201	Epidemic.
Karachi.....	Jan. 3-Apr. 10....	11	3	
Madras.....	Nov. 1-Apr. 3....	94	13	
Rangoon.....	Oct. 1-Dec. 31....	3	3	
Do.....	Jan. 1-Mar. 27....	67	11	Feb. 1-28: Cases, 16; deaths, 6.
Indo-China:				
Anam—				
Binh-Dinh.....	Oct. 1-31.....	3		
Phanrang.....	Nov. 1-30.....		1	
Cambodia—				
Pnompenh.....	Oct. 1-Nov. 30....	2	1	
Cochin China—				
Bac-Lien.....	Nov. 1-30.....	1		
Saigon.....	Feb. 22-Mar. 27....	16	10	

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received from Dec. 26, 1914, to May 28, 1915—Continued.

SMALLPOX—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Indo-China—Continued.				
Laos—				
Pakse.....	Feb. 22-Mar. 27...	1	.....
Tonkin—				
Haiduong.....	.....do.....	4	.....
Haiphong.....	Oct. 1-Nov. 30....	13	1	
Hanoi.....	Nov. 1-30.....	1	.....
Italy:				
Milan.....	Dec. 1-31.....	1	.....
Turin.....	Dec. 21-Mar. 21..	1	.....
Japan.....				Jan. 1-Dec. 31: Cases, 485; deaths 110, exclusive of Taiwan.
Kagi.....	Jan. 31-Feb. 6....	3	3	
Nagasaki.....	Jan. 18-Mar. 14..	4	1	
Nagasaki-ken.....	Oct. 1-Dec. 31....	60	12	
Taiwan.....	Oct. 25-Apr. 17....	72	23	
Mexico:				
Aguascalientes.....	Dec. 7-May 2.....	.....	28	
Chihuahua.....	Nov. 30-Apr. 9....	29	19	
Juarez.....	Dec. 4.....	.....	.....	Prevalent.
Matatlan.....	Dec. 9-Apr. 13....	66	42	
Mexicali.....	Feb. 14-20.....	3	.....
Monterey.....	Dec. 14-Apr. 25....	87	2	Feb. 10: Epidemic.
Nuevo Laredo.....	Jan. 31-Apr. 10....	5	5	To May 13: Cases, 17.
Progreso.....	Apr. 4-May 1.....	29	13	
Salina Cruz.....	Nov. 1-7.....	1	.....
San Juan Bautista.....	May 8.....	.....	.....	Present among troops.
Tampico.....	Dec. 1-Apr. 19....	.....	38	Prevalent among the military.
Tuxpam.....	Apr. 29.....	.....	.....	Recent epidemic; 300 cases estimated.
Vera Cruz.....	Dec. 1-Apr. 24....	212	33	
Netherlands:				
Rotterdam.....	Jan. 24-Mar. 6....	5	1	
Newfoundland:				
St. Johns.....	Jan. 23-29.....	1	.....
Norway:				
Christiansand.....	Nov. 1-30.....	7	2	Including report, vol. 29.
Stavanger.....	Nov. 30-Dec. 5....	1	.....
Persia:				
Teheran.....	Feb. 14-20.....	.....	.....	Present.
Peru:				
Arequipa.....	Feb. 28.....	.....	.....	Epidemic.
Philippine Islands:				
Manila.....	Dec. 20-26.....	2	.....	From steamship Ixion.
Portugal:				
Lisbon.....	Nov. 22-Mar. 27....	29	.....
Russia:				
Moscow.....	Nov. 8-Mar. 6....	159	37	
Odessa.....	Oct. 25-Nov. 18....	10	1	
Do.....	Nov. 30-Mar. 13....	111	13	Feb. 20-27: Cases, 6; deaths, 1.
Petrograd.....	Oct. 25-Mar. 27....	847	271	
Riga.....	Oct. 11-Mar. 20....	161	.....
Viadivostok.....	Mar. 2-8.....	1	.....
Santo Domingo:				
Santo Domingo.....	Feb. 1-15.....	.....	2	
Spain:				
Almeria.....	Mar. 1-31.....	.....	2	
Barcelona.....	Nov. 22-Mar. 25....	.....	66	
Madrid.....	Nov. 1-Feb. 28....	5	10	
Do.....	Mar. 1-31.....	.....	9	
Seville.....	Dec. 1-Mar. 31....	.....	12	
Valencia.....	Nov. 15-May 1....	1,118	58	
Straits Settlements:				
Singapore.....	Oct. 10-Mar. 20....	19	8	
Sweden:				
Stockholm.....	Dec. 13-19.....	.....	1	
Sundsvall.....	Feb. 1-28.....	1	.....
Switzerland:				
Basel.....	Nov. 7-Apr. 24....	81	.....
Turkey in Asia:				
Beirut.....	Nov. 1-Mar. 27....	124	40	
Haifa.....	Nov. 2-Dec. 6....	14	6	
Jaffa.....	Jan. 10-Apr. 3....	8	.....
Jerusalem.....	Oct. 1-Nov. 30....	5	.....
Tripoli.....	Dec. 27-Mar. 27....	22	.....	Present in villages in vicinity.
Venezuela:				
Zulia, State.....	Apr. 25.....	.....	.....	Outbreak.
Zanzibar.....	Nov. 14-21.....	.....	7	

SANITARY LEGISLATION.

STATE LAWS AND REGULATIONS PERTAINING TO PUBLIC HEALTH.

ILLINOIS.

Communicable Diseases—Notification of Cases—Placarding—Quarantine—Removals—Disinfection—Funerals. (Reg. Bd. of H., Dec. 12, 1914.)

1. *Reports to local health authorities.*—Every physician who treats or examines, every nurse or attendant who attends, every householder upon whose premises there resides, and every person who has knowledge of any person suffering from, or suspected to be suffering from or afflicted with, any of the diseases enumerated in this section (hereafter referred to as "reportable diseases") must immediately report the same in writing, or by telephone followed by a written report, to the local health officer, health commissioner, or chairman of the board of health, as the case may be.

If the municipality has no health officer, reports of these diseases must be made to the mayor of the city, president of the village, or to the official designated by ordinance to receive the same.

Cases occurring in territory outside of the limits of a municipality must be reported to the person designated by the rules of the township or county board of health to receive such reports, or, if there be no such person designated by such rules, reports must be made to the supervisor of the township, or to the county board of health.

Reportable diseases, class 1.—Acute infectious poliomyelitis, Asiatic cholera, bubonic plague, cerebrospinal fever, chicken-pox, diphtheria (membranous croup), leprosy, measles, meningitis (epidemic cerebrospinal), Rocky Mountain spotted fever, scarlet fever (scarlatina, scarlet rash), smallpox, typhus fever, whooping cough, and yellow fever.

Reportable diseases, class 2.—Actinomycosis, anthrax, "continued fever" (over seven days' duration), dysentery (a) amebic, (b) bacillary, German measles, glanders, hookworm disease, malaria, mumps, ophthalmia neonatorum, pellagra, puerperal septicemia, rabies, streptococcus, (septic) sore throat, tetanus, trichinosis, trachoma, typhoid and paratyphoid fever, and tuberculosis of any form.

Every person to whom reports of cases of reportable diseases are made shall keep a record of each case, in which shall be shown date when report was received, name, age, sex, and residence of the patient, disease, date when taken sick, date when case was terminated and how terminated, and name and address of person reporting. This record shall be open at all times to the inspection of duly authorized representatives of the State board of health.

2. *Reports to the State board of health.*—Every person to whom reports of reportable diseases are made must forward reports of the same on forms provided for the purpose to the State board of health at Springfield, as follows:

Every case of reportable disease of class 1 (except measles and whooping cough) must be reported immediately upon receipt of notification. If reported by telephone or telegraph, a written report must follow.

Every case of a reportable disease of class 2 and of measles and whooping cough must be reported within two days after the close of the week in which notification was received.

3. *Placarding.*—Immediately upon receipt of a report of a case of any reportable disease of class 1, and certain diseases of class 2, the person receiving same, his deputy or duly authorized representative, shall visit the premises upon which the case exists, affix the required warning placard in a conspicuous place at each outside entrance of the building, house, or flat, as the case may be, and shall inform a responsible inmate of such premises of the rules and regulations which must be observed during the period of quarantine. Defacement of such placards or their removal by any other than the local health authorities or their duly authorized representatives of the State board of health is strictly prohibited.

4. *Quarantine.*—Quarantine must be strictly enforced and observed according to the requirements set forth in the rules adopted and promulgated by the State board of health for the control of these diseases. (Copies of the rules governing each of the diseases of class 1, and certain of the diseases of class 2, can be obtained on application to the State board of health.)

In no instance shall quarantine be terminated without the permission of the local health authorities or of the State board of health, and then only after full compliance with the rules.

5. *Removals.*—No person having any reportable disease (excepting hookworm disease, malaria, ophthalmia neonatorum, rabies, trichinosis, tetanus, and tuberculosis) shall be removed from the premises on which he is found when the case is diagnosed, except by permission of the local health authorities or the State board of health, nor shall he be removed from the municipality, township, or county in which he is found when the case is diagnosed or in which he is under treatment, except by permission of the State board of health.

6. *Disinfection.*—After the recovery, removal, or death of any person affected with any of the diseases of class 1, or with certain diseases of class 2, the infected premises, contents, and inmates must be thoroughly disinfected in a manner and method prescribed by the State board of health for each of the several diseases.

Disinfection shall be performed by or under the supervision of the local health authorities, or by their duly authorized representatives.

7. *Precautions to be observed by physicians and attendants.*—Physicians attending cases of reportable diseases shall be permitted to visit their patients whenever necessary, but on leaving the infected premises they must take all necessary precautions to avoid carrying the infection on person, clothing, or any article they may have had with them in the sick room.

Nurses or attendants may leave the infected premises only in cases of absolute necessity, and then only upon permission of the local health authorities and after taking all precautions to avoid carrying the infection.

An ample supply of towels, basins, water, soap, and an approved disinfectant should always be kept on hand for use by the physician and the attendant.

8. *Disposal of the dead.*—In event of death from any of the reportable diseases, the body shall be prepared and the funeral shall be conducted in the manner prescribed in the rules for the control of the several diseases.

Public or church funerals of persons dead from any of the reportable diseases of class 1 and certain of the diseases of class 2 are strictly prohibited. (For modification of this requirement with respect to certain diseases, see the special rules for the control of the respective diseases.)

When the body of anyone dead from a reportable disease is to be transported by railroad or by other common carrier, the official rules of the State board of health for transportation of the dead must be observed.

[These regulations were in force throughout Illinois on and after Feb. 16, 1915.]

Diphtheria—Notification of Cases—Placarding—Quarantine—Removal of Patients—School Attendance—Disinfection—Burial. (Reg. Bd. of H., Feb. 16, 1915.)

1. *Reports.*—Every physician, attendant, parent, householder, or other person having knowledge of a known or suspected case of diphtheria (membranous croup, diphtheritic croup) must immediately report the same to the local health authorities.

All local health authorities, upon being advised of a case of diphtheria (membranous croup, diphtheritic croup), must immediately report the same to the State board of health on the form provided for that purpose.

2. *Placarding.*—Whenever a case of diphtheria (membranous croup, diphtheritic croup) is reported to the local health authorities, they shall affix at the outside of all entrances of the building, house, or flat, as the case may be, a red warning card not less than 10 by 15 inches in size, on which shall be printed in black with bold-face type at least the following: "Diphtheria," in type not less than 3½ inches in height, and "Keep out," in similar type not less than 2½ inches in height.

Premises upon which diphtheria carriers reside shall be placarded in manner as above set forth with a white card printed in type of the prescribed kind and size, reading "Diphtheria carrier," "Keep out."

Defacement of such placards or their removal by any other than the local health authorities, or the duty authorized representative of the State board of health, is strictly prohibited.

3. *Quarantine.*—In cases of diphtheria (membranous croup, diphtheritic croup) quarantine must be maintained for a minimum period of two weeks, or until the patient, contacts, and inmates of the infected premises yield negative cultures from nose and throat—two negative cultures on successive days from the patient, and one negative culture from contacts and other inmates of the premises, following recovery of the patient. (See note on laboratory examinations.)

Quarantine may be terminated only by the local health authorities or by a duly authorized representative of the State board of health.

The patient and all persons residing in the infected building, house, or flat, as the case may be, must be confined to the building, house, or flat where the case exists, excepting as hereinafter provided.

The patient and attendant must be isolated in a well-ventilated room, screened from flies, and as remote as possible from other occupied rooms. Arrangements should be made to supply them with food and other necessities without it being necessary for the attendant to leave or for other persons to enter the sick room. All articles which must be taken from the sick room must be thoroughly disinfected immediately upon removal.

No one but the necessary attendant, the physician, the health officer, and the representative of the State board of health may be permitted to enter the infected premises. Upon leaving they must take all precautions necessary to prevent the spread of the disease. Attendants must not leave the infected premises until they have obtained the permission of the local health authorities, such permission to be granted only when absolutely necessary. An ample supply of towels, basins, water, and an approved disinfectant should always be on hand for the disinfection of the hands of the attendants.

Adults who continue to reside in the infected premises must be quarantined. They may be removed therefrom only upon permission granted by the local health authorities and after thorough disinfection of person and clothing. Whenever possible cultures should be taken from nose and throat, examined and reported upon prior to granting permission for removal. Adults, excepting school-teachers and other persons employed in or about a school building, removed from infected premises, may go about their usual business, providing they do not again enter the infected premises, or come

in contact in any way with patient or attendant, or with any article from such premises during the period of quarantine.

School-teachers and other persons employed in or about a school building may likewise be removed from infected premises, but they must not return to school until after a negative culture has been obtained from nose and throat.

Children continuing to reside on the infected premises must be confined to the building, house, or flat, as the case may be, until quarantine has been raised by the health authorities, and thereafter should not be permitted to mingle with well children until a negative culture has been obtained from nose and throat.

Children showing no clinical evidence of diphtheria may be removed from infected premises upon permission granted by the health officer and after thorough disinfection of person and clothing. Such children may only be removed to premises upon which none but adults reside, unless a negative culture has been obtained immediately prior to such removal. Children so removed, who have not been cultured, must remain within the premises to which removed for a period of seven days following removal.

Children removed from infected premises must not be permitted to reenter such premises or come in contact with the patient or attendant, or with any article from the infected premises until quarantine thereof has been terminated.

Any susceptible child exposed to a case of diphtheria, even though not a member of the family in which a case exists and not residing on the infected premises, should be kept away from all well children for a period of seven days, unless a negative culture has been obtained from the child's nose and throat, following such exposure.

4. *Quarantine of "carriers."*—Persons known to be diphtheria carriers must be placed in quarantine and isolated as far as possible. Children of the family who yield negative cultures and who do not come in contact with the carrier in any way need not be excluded from the schools. Quarantine of diphtheria carriers should be raised when one negative culture from nose and throat of carrier is obtained.

5. *Removals.*—No person, patient or contact, and no article of any kind whatsoever, shall be removed from the premises upon which a case of diphtheria (membranous croup, diphtheritic croup) has been found, unless consent to such removal be first obtained from the local health authorities or the State board of health. Under no circumstances shall permission be granted for removal of any person or article from premises upon which a case of diphtheria (membranous croup, diphtheritic croup) has been found to any premises upon which milk or other foodstuffs are produced, sold, or handled, until quarantine has been terminated, and then only upon permission of the local health authorities or the State board of health.

No person affected with or exposed to diphtheria (membranous croup, diphtheritic croup) shall be removed from any city, village, township, or county in which he is found unless consent to such removal be first obtained from the State board of health.

6. *Exclusion from the schools and places of public gathering.*—Children recovered from an attack of diphtheria (membranous croup, diphtheritic croup) must be excluded from the schools, Sunday schools, and other places of public gathering for at least one week following termination of quarantine, unless negative cultures have been obtained from nose and throat.

All children who continue to reside on the infected premises must be excluded from the schools during the period of quarantine and one week thereafter, or until negative cultures are obtained from nose and throat.

Children who have been exposed to diphtheria and who do not reside on the infected premises must be excluded from the schools for at least one week from date of last exposure, unless negative cultures from nose and throat are obtained.

School teachers and other persons employed in and about a school building, who have been exposed to diphtheria, must be excluded from the school building or grounds until it has been definitely established that they are not diphtheria carriers, and until persons and clothing have been thoroughly disinfected.

7. *Sale of milk and other foodstuffs from infected premises prohibited.*—Whenever a case of diphtheria (membranous croup, diphtheritic croup) shall occur on any premises where milk or other foodstuffs is either produced, handled, or sold, the sale, exchange, or distribution in any manner whatsoever, or the removal from the infected premises of milk, cream, and milk products or other foodstuffs until the case has terminated, and the premises and contents and all utensils are thoroughly disinfected, under the supervision of the local health authorities, is prohibited: *Provided*, That in the event of diphtheria (membranous croup, diphtheritic croup) occurring on a dairy farm, the live stock only may be removed to some other premises and the milking done and milk cared for and sold from such other premises by persons other than those of the household of the person so affected, upon obtaining permission to do so from the local health authorities or the State board of health.

Whenever a case of diphtheria (membranous croup, diphtheritic croup) shall occur on premises connected with any store, such store shall be quarantined until the case is terminated and the premises are thoroughly disinfected, unless the premises are so constructed that that part in which the case exists can be and is effectively sealed, under the supervision of the local health authorities, from the store, and unless the employees and all other persons connected with the store do not enter that part of the premises where the case exists and do not come in contact with the patient, his attendant, or any article whatsoever from the quarantined premises.

8. *Deliveries of milk, groceries, and other necessities.*—Milk, foodstuffs, and other necessary supplies may be delivered at quarantined premises, but there must be no contact of any kind between inmates of the quarantined premises and the delivery agents. Wherever practicable, milk must be delivered in bottles. Where milk can not be delivered in bottles, the householder must place a thoroughly sterile container (a freshly scalded bottle or pail) to receive the milk at some convenient place outside the house out of reach of dogs or cats. The milkman shall place the milk therein without handling the receiving container. No milk bottle, basket, or any other article whatsoever may be taken out of or away from the infected premises during the period of quarantine. Before milk bottles are removed from the premises after quarantine is raised, they must be sterilized under the direction of the local health authorities. Mail must not be taken from the quarantined premises during the period of quarantine.

9. *Disinfection.*—All articles taken from the sick room must be disinfected upon removal. Exposure in the open air of carpets, rugs, curtains, bedding, and similar articles from the infected premises for the purpose of airing, shaking, beating, or sunning is strictly prohibited, unless, in the opinion of the local health authorities, such may be done without danger of the spread of the disease.

Books, toys, and other similar articles used to amuse the patient are best disposed of by burning. Under no circumstances should borrowed toys or books be returned. Library and schoolbooks must not be returned. They must be burned.

Bed and body linen, which has been in contact with the patient, and handkerchiefs or cloths which have been used to receive discharges from the patient, must be immersed for not less than two hours in an approved disinfectant before removal from the sick room, and after removal should be boiled.

No article of clothing, or other article, may be removed from the infected premises to a laundry or other place for washing, unless it has previously been disinfected by immersion for not less than two hours in an approved disinfectant, and the approval of the local health authorities has been obtained.

Dogs, cats, and other household pets must be excluded from the infected premises during the entire period of quarantine. Any such animals who have been in contact with the patient must be killed or subjected to a thorough disinfecting bath before removal from the infected premises, and must not be permitted to reenter the same until quarantine has been raised and the premises have been disinfected.

10. *Deaths and burials.*—In the event of death, the body must be wrapped in a sheet thoroughly soaked in an approved disinfectant, and then placed in an airtight coffin, which must remain in the sick room until removed for burial. The coffin must not again be opened on any pretext whatsoever. Public and church funerals are prohibited. No person whose attendance is not necessary for the conduct of the funeral shall be permitted to enter the premises where the death occurred. Interment must be made within 48 hours after death.

Nothing in this rule shall be held to prevent the attendance at the funeral of any adult member of the immediate family, who shall have been in attendance upon the deceased and who shall have been exposed to the disease prior to such funeral and whose clothing and person has first been disinfected. Other persons desiring to follow the body to the grave may do so, provided that they do not enter the premises where the death occurred and do not enter the vehicles occupied by persons who have entered or come from such premises.

Flowers which may have been sent to the infected premises must be destroyed by burning immediately upon the removal of the body from the premises. Under no circumstances may they be taken from the infected premises.

When the body of any one dead from diphtheria (membranous croup, diphtheritic croup) is to be transported by railroad or by other common carrier, the official rules of the Illinois State Board of Health for the transportation of the dead must be observed.

MONTANA.

Chicken-Pox—Made Notifiable. (Reg. Bd. of H., Apr. 1, 1915.)

At a meeting of the State board of health held April 1, 1915, chicken-pox was designated as a communicable disease and made notifiable.

Vegetables—Sale of Those Grown on Sewage Irrigated Farms Prohibited. (Res. Bd. of H., Apr. 1, 1915.)

Whereas it has been shown on scientific investigation that vegetables grown on sewage irrigated farms may transmit typhoid fever: Therefore

Resolved, That the sale of all vegetables grown on farms irrigated with human sewage is absolutely prohibited in the State of Montana.

Hotels and Restaurants—Sanitary Regulation. (Reg. Bd. of H., Apr. 1, 1915.)

REGULATION 1. *Suggestions to guests.*—These rules and regulations are designed to give you the maximum safety, comfort, and health protection that a hotel or restaurant will reasonably permit. The management, however, must have your hearty assistance and cooperation to conduct this establishment in a satisfactory manner. You should use the property of the hotel or restaurant with the same care as if it were in your own homes. The use of washbowls in sleeping rooms for urinals, towels, and bedding to shine your shoes, expectorating on floors, walls, or carpets, or other equally filthy practices should be strongly condemned by all persons who desire to improve living conditions in our hotels or restaurants.

REG. 2. *Construction.*—Every hotel and restaurant in this State shall be conducted in every department in a manner most conducive to the protection of the health, comfort, and safety of its guests; and it shall be constructed, equipped, and maintained with efficient plumbing, ventilation, and lighting.

REG. 3. *Lavatories and toilets.*—(a) All hotels in cities, towns, and villages where a system of waterworks and sewers adjacent to the property is maintained for public use shall, on or before January 1, 1916, be equipped with suitable lavatories and toilet facilities for the accommodation of its guests. The sewer must be connected with the public-sewer system.

(b) Each hotel shall be provided with a public wash room, which must be supplied with clean individual towels or paper towels. The common or roller towel is absolutely prohibited.

REG. 4. *Outside toilets.*—(a) All hotels in cities, towns, or villages not having a public-sewer system or waterworks shall have properly constructed privies, vaults, or other sanitary devices, which shall always be kept clean, properly ventilated, and well screened from insects and rodents.

(b) The wall or partition between the apartments must be tight. A separate apartment with separate entrance properly designated and screened from public view must be provided for each sex. All privy doors shall be self-closing.

(c) Where septic tanks are installed they must be constructed according to plans approved by the State board of health.

REG. 5. *Sleeping accommodations.*—(a) Every sleeping room shall be of sufficient size to afford at least 400 cubic feet of air space for each occupant over 12 years of age and 200 cubic feet for each occupant under 12 years of age. No greater number of occupants than thus established shall be permitted to sleep in any one room.

Provided, That this regulation shall not apply in cases of emergency where the change is approved by the local health officer.

(b) Sleeping rooms must be kept in good repair. The ceiling, walls, and floor shall be free from dirt.

(c) No room shall be used for a sleeping room in any hotel which does not have an adequate opening other than a transom over the door to the outside of the building or to well-ventilated light wells, air shafts, courts, or hallways. Light wells, air shafts, and courts in such hotels must be open at the top or provided with approved ventilators to furnish proper ventilation.

NOTE.—In rooms having an outside window or a window opening on a well-ventilated light well, air shaft, or court, proper ventilation can be secured if the window is opened at top and bottom and an adjustable shield is placed at the bottom to prevent drafts.

(d) At least one window in each sleeping room must be so constructed to permit it to be raised from the bottom or lowered from the top at any time. If storm windows are used, at least one for each sleeping room shall be either suspended from the top or hinged from the sides so that it can be opened and closed readily.

REG. 6. *Bedding.*—(a) All hotels shall hereafter provide each bed, bunk, cot, or other sleeping place for the use of transient guests with white cotton or linen pillow slips, top and under sheets, also mattress, and a reasonably sufficient quantity of bedding.

(b) The under sheet to be of sufficient size to completely cover the mattress and fold under on sides and ends.

(c) The top sheet must be at least of equal width, and on and after January 1, 1916, it must be not less than 96 inches long after being laundered.

(d) The long top sheet is to be folded back at the head of the bed so as to cover all top coverings at least 12 inches.

(e) All bedding, including mattresses, quilts, blankets, pillows, sheets, and comforts used in any hotel must be thoroughly aired and kept clean. No bedding shall be used which is worn out and unfit for farther use. Pillow slips and sheets must be washed and ironed as often as they shall be assigned to a different guest.

NOTE. Bedquilts are difficult to wash and keep clean, and with the best of care they can not be kept in proper condition. When they become worn they are especially objectionable. All bedcovers should be made of washable material. Washable blankets and bedspreads should, whenever possible, be substituted for quilts. Such changes are earnestly recommended.

REG. 7. *Communicable diseases.*—Whenever a room in any hotel has been occupied by a guest ill with a communicable disease, it shall be thoroughly fumigated and disinfected in accordance with the rules of the State board of health, before being occupied by another guest.

REG. 8. *Premises.*—All premises connected with, or used by, any hotel or restaurant shall be kept in a sanitary condition, and it shall be the duty of the local or county health officer, either upon his own initiative or upon the complaint of any citizen, to take such action as may be necessary to abate any nuisance, source of filth, or cause of sickness existing on the premises.

REG. 9. *General provisions.*—(a) The use of the common drinking cup is prohibited in all hotels, restaurants, lodging houses, and other public places.

(b) It shall be unlawful for any person, firm, or corporation to sweep, or permit sweeping in hotels, restaurants, and other public places where the public is invited, unless the floor is first sprinkled with water, moist sawdust, or other substance to prevent the raising of dust. When vacuum cleaners or properly filled reservoir dust-less brushes are used the sprinkling or use of moist sawdust is not required.

(c) All floors and interior woodwork in hotels and restaurants shall be cleaned as often as may be necessary to keep them in a sanitary condition.

(d) All cuspidors, wherever used, must be cleaned daily and kept free from odor.

REG. 10. No room infested with bedbugs or vermin of any kind shall be rented to any guest for sleeping purposes.

REG. 11. *Inspections.*—All hotels, restaurants, and lunch counters must be inspected each month by local or county health officers, or his deputy, and when inspected must be scored according to the score card, which is a part of these regulations.

When the score of any hotel, restaurant, or lunch counter falls below 70, but reaches 60 or more, the owner or lessee of such hotel, restaurant, or lunch counter will be sent a warning notice, and if on subsequent inspection the score again falls below 70, or if at any time the score falls below 60, the license of said owner or lessee shall be revoked by the State board of health. Before the revocation of any license, the licensee shall have the privilege of appearing before the State board of health to show cause why his license should not be revoked.

REG. 12. *Posting regulations.*—These regulations must be posted in a conspicuous place in every hotel.

NORTH DAKOTA.

Schools—Medical Examination of Pupils. (Act Feb. 12, 1915.)

1. That section 1346 of the Compiled Laws of 1913 be amended to read as follows:

"1346. The board of any school corporation in this State may, and whenever petitioned by a majority of the persons having children attending the schools of the district shall, employ one or more physicians as medical inspectors of schools. It shall be the duty of the medical inspector to examine, at least once annually, all children enrolled in the public schools of the district, except those who present a certificate of health from a licensed physician, and to make out suitable records for each child, one copy of which shall be filed with the county or city superintendent of schools. Notice of physical defects of abnormal or diseased children shall be sent to the parents, with recommendations for the parents' guidance in conserving the child's health. The medical inspector shall cooperate with State, county, and township boards of health in dealing with contagious and infectious diseases and to secure medical treatment for indigent children. It shall be the duty of the county and city superintendents of schools to cooperate with school boards in promoting medical inspection. He may arrange schools by groups, especially in the rural districts, for the purpose of inspection, and shall advise school boards with a view to securing the most efficient and economical administration of this law. The school board or board of education shall furnish all blanks and other needed supplies for this purpose."

County Boards of Health—Organization. County Health Officer—Appointment and Removal. (Act Jan. 28, 1915.)

1. That section 404 of the Compiled Laws of North Dakota for 1913 is hereby amended to read as follows:

"404. There is hereby established county boards of health, composed of a president, vice president, and superintendent; the State's attorney in each county shall be president of the county board; the county superintendent of schools shall be vice president, and the board of county commissioners shall at the first meeting of the board each year appoint a superintendent of public health for the county, who shall be learned in medicine and hold a license to practice medicine and surgery within the State, and the several persons appointed shall hold their offices for one year and until their successors are elected and qualified.

"*Provided, however,* That whenever the State board of health has reason to believe that the county superintendent of public health is failing to perform his duties as prescribed by law they may report the case to the board of county commissioners, and the latter may, after proper hearing, at their next meeting declare the office vacant, and appoint another physician in his place for the remainder of the unexpired term."

Hotels, Restaurants, and Lodging Houses—Sanitary Regulation. (Act Feb. 27, 1915.)

1. That section 2984 of the Compiled Laws of 1913 be amended to read as follows:

"2984. Every hotel shall be well drained, constructed and plumbed according to established sanitary principles; shall be kept clean and in a sanitary condition, and free from effluvia arising from any sewer, drain, privy, or other source within control of the owner, manager, agent, or other person in charge; shall be provided with water-closets or privies properly screened, for the separate use of males and females, which water-closets or privies shall be disinfected as often as may be necessary to keep them at all times in a sanitary condition.

"All bedrooms shall be kept free from vermin, and the bedding in use shall be clean and sufficient in quantity and quality; all sheets shall be at least 8 feet in length; each guest shall be furnished with two towels; in case bedrooms are carpeted the carpet or carpets thereon shall be taken up and thoroughly cleaned at least once each year; no rusted tin or iron vessel or utensil shall be used in cooking food, and all food-stuffs shall be kept in a clean and suitable place, free from dampness and contact with dirty water; the floors, closets, cupboards, and walls of all kitchens shall at all times be kept free from dirt and no dust or grease shall be allowed to collect thereon; a metal container shall be provided to hold ashes where such ashes are stored in or around the hotel building. In all cases where a patient having an infectious or contagious disease has been confined in a hotel room such room shall upon the removal of such patient be closed and fumigated, and upon the completion of such fumigation the certificate of a reputable physician to that fact shall be forwarded to the hotel inspector. In all hotels or lodging houses where 50 cents or more per night is charged for lodging, the sheets and pillow cases shall be changed after the departure of each guest, and within three months after the taking effect of this article it shall be unlawful to have upon a bed of any such hotel or lodging house any mattress of a lower grade than that commonly known to the trade as cotton felt combination; each mattress shall weigh at least 35 pounds unless it be a hair mattress, in which case it shall weigh 30 pounds or more. Each hotel, rooming house or restaurant where 50 cents or more per meal is charged shall keep in its main public washroom individual towels or paper towels in full view and reach of all guests at all hours. Each room shall be properly ventilated by at least one window, and by a doorway leading into the hall. Every hotel and restaurant where rooms are rented to lodgers by the day, by the week, or by the month shall, during the winter months, be equipped with storm windows on hinges in such a way that the storm windows may be opened and closed at will; in lieu of such hinged storm windows the said places may be equipped with windows having slides therein that open and close over an opening of not less than 10 by 10 inches. During the summer months all such hotels, restaurants, and rooming houses shall equip their windows with screens adequate to keep out flies and mosquitoes."

MUNICIPAL ORDINANCES, RULES, AND REGULATIONS PERTAINING TO PUBLIC HEALTH.

JERSEY CITY, N. J.

Milk and Cream—Production, Care, and Sale. (Ord. Apr. 1, 1915.)

General considerations governing the sale of milk or cream in Jersey City.

SECTION 1. No person, firm, or corporation shall engage in the business of selling milk or cream in Jersey City, or shall keep for sale or have in his possession with intent to sell milk or cream without having first obtained a permit therefor from the health bureau of the said city.

SEC. 2. Applications for such permit to sell milk or cream in Jersey City shall be made upon a printed form to be supplied by the said health bureau and shall contain all the information required by that bureau.

SEC. 3. Permits to sell milk or cream in Jersey City shall be issued for the period from the 1st day of May of any year to the 30th day of April of the following year and shall be renewed annually.

SEC. 4. The fee for such permit shall be \$1 for each store, restaurant, bar, soda fountain, or other place where milk or cream is sold, kept for sale, or offered for sale, and \$2 for each wagon or other vehicle from which milk or cream is sold or delivered.

SEC. 5. Permits to sell milk or cream shall be kept at all times conspicuously posted in any store, restaurant, bar, soda fountain, or other public place where milk or cream is sold, kept for sale, or offered for sale, and every wagon or other vehicle from which milk or cream is sold or delivered shall have a license plate securely attached, both on the right and on the left side of the wagon or other vehicle, in some place where it can be readily seen from the street.

SEC. 6. No permit for the sale of milk or cream from any store in Jersey City shall be issued till such store or place of business shall have been inspected by a milk inspector of the health bureau and shall have obtained a score of at least 55 per cent on the score card for milk stores adopted by said bureau and such special requirements as may be demanded shall have been complied with, and no permit shall be issued for any wagon or other vehicle from which milk or cream is to be sold or delivered unless the health superintendent is satisfied that such wagon or other vehicle is suitable from a sanitary standpoint to be so used.

SEC. 7. Any permit issued by the health bureau for the sale of milk or cream may be revoked for cause, at any time, due notice having been given by the health superintendent or a duly authorized assistant, and an opportunity to be heard having been granted the person, firm, or corporation against whom a complaint may exist.

SEC. 8. Any person, firm, or corporation licensed to sell milk or cream in Jersey City shall promptly notify the health bureau in writing of any change in the source from which such milk or cream is procured and shall twice annually, when called for by said bureau, furnish a complete and true list of names and addresses of all customers to whom milk or cream is supplied, and the health bureau shall have authority to compel the discontinuance at any time of milk or cream from any source which is likely to be prejudicial to the health of the consumer, or to require its pasteurization.

SEC. 9. No person, firm, or corporation shall sell, offer for sale, or keep with intent to sell within the limits of Jersey City, any milk or cream which does not in all respects conform to the statutory requirements of the State of New Jersey, at present in force governing the purity of milk and cream, and to the standards and requirements adopted by said city in this ordinance.

SEC. 10. In determining whether any milk or cream sold, offered for sale or had in possession with intent to sell, is impure or unwholesome, a milk inspector from the health bureau shall take two or more samples of such milk to be placed in clean bottles, securely sealed with the seal of the health bureau and labeled with the inspection number and sample number, and the date and hour at which the sample was taken. One of these samples shall be immediately tendered to the owner or person in charge of the milk from which the samples were taken, and the other sample or samples shall be promptly delivered to either the city chemist or the city bacteriologist, or to both, for analysis, who shall thereafter report their finding or findings to the health superintendent in writing. The health superintendent shall retain this report and shall enter a record of it in a suitable record book kept for that purpose.

SEC. 11. No milk or cream shall be sold, kept for sale or held with intent to sell in Jersey City, in any living or sleeping room or in any store that communicates directly with any living or sleeping room, or with any room where bolognas or other sausages or any meat is smoked, or which communicates directly with any toilet room not ventilated to the outer air, or which is not in a thoroughly sanitary condition, or where any infectious or contagious disease exists, nor in any store where any person is employed who is in contact with such contagious disease or who is afflicted with any venereal disease or with tuberculosis or who has been shown to be a carrier of typhoid bacilli or the germs of any other disease which may be transmitted through milk, excepting only that the provisions of this section relating to stores which communicate with living or sleeping rooms shall not be held to interfere with the sale of milk in bottles by such stores.

SEC. 12. The superintendent of health of this city shall have authority to demand a certificate of health, signed by a physician in good and regular standing, from any employee of a store where milk or cream is sold, kept for sale or offered for sale, who may be suspected to be suffering from a transmissible disease.

SEC. 13. Ice boxes or refrigerators used for the storage of milk or cream or milk products shall be lined with zinc or enamel. They must be kept at all times clean and free from odor; they shall drip into a suitably placed, water-supplied sink, properly trapped and connected with a sewer, unless a special permit be granted by the health bureau where sewer connections can not readily be made, and they shall not be used for the storage of substances other than milk or cream or milk products.

SEC. 14. All stores where milk or cream is sold, kept for sale or offered for sale, must be clean, well lighted, and ventilated and free from objectionable odors. Such stores must have all openings screened against flies and other insects between May 15 and October 15 of each year. The walls and ceilings shall be smooth hard finish, painted, not papered. The shelves and all other parts of the store shall be kept free from dust and the floor shall be swept clean each day and scrubbed at least once each week. Dry sweeping or dusting is prohibited. Satisfactory toilet facilities, readily accessible to the employees, and a conveniently situated washstand equipped with soap and individual towels of paper or other material shall be provided.

SEC. 15. Each employee or attendant in any store where milk or cream is sold or offered for sale shall wash his hands in soap and water each time after visiting the toilet. His clothing shall be clean and he must not smoke while on duty.

No dog or other domestic animal or live poultry shall be kept in any room where milk or cream is sold, nor shall poultry be killed, plucked, or dressed therein, nor in any room directly connected therewith, nor shall poultry be allowed at large in a yard where wagons or other vehicles used in the sale or delivery of milk are stored.

SEC. 16. No milk or cream shall be kept, stored, or held in any stable or in any room which connects directly with any stable. No milk shall be transferred to bottles or other containers in any stable or upon any street, ferry, or other public place, excepting only as this may be done in filling a bottle or other container offered by a customer. It shall be unlawful for a driver or other person engaged in the sale or delivery of milk or cream from any wagon or other vehicle, to have caps or tops for milk bottles in his possession while so engaged, and he shall not carry any cans or other vessels containing water while so engaged, and it shall be unlawful for such driver or other person to remove milk bottles from any house where a contagious disease exists during the continuance of quarantine thereon, and after quarantine has been lifted not until the bottles have been sterilized in boiling water.

SEC. 17. No milk bottles shall be received from a customer by any milk dealer that have not been well washed or are not in a cleanly condition when returned, and said bottles must not be used by the consumer for any purpose other than as milk containers. No dealer shall return milk bottles for refilling that are not well washed and in cleanly condition when returned to the bottling establishment. No milk bottles recovered from any dumping place for ashes or refuse shall be returned to the owner or owners or shall be sold for use as milk containers until they have been first washed and sterilized. No milk bottles having the name of the person, firm, or corporation owning them blown in the glass of the bottle shall be used by any person other than the rightful owner as milk containers. No cans or other containers for milk or cream shall be returned to a wholesale dealer from any store where milk is sold and no dealer shall return any cans to the source from which his supply is derived that have not been thoroughly washed before being so returned. It shall be unlawful to use milk cans for any other purpose than as milk containers.

SEC. 18. All milk or cream held, offered for sale, or kept with intent to sell in the city of Jersey City shall be at all times well iced and held in an ice tub or refrigerator. Where loose milk is sold, dippers used for transferring milk shall be kept in the can in which they are used and all utensils used in the sale of milk and all containers for milk other than sealed bottles shall be thoroughly washed and sterilized daily.

SEC. 19. Any milk or cream held, sold, offered for sale, or kept with intent to sell within the city of Jersey City which may be found not to conform to the requirements of this ordinance in respect to purity or the temperature at which it is held, by an inspector from the health bureau authorized to inspect milk, may be seized and destroyed.

SEC. 20. All stores in Jersey City where loose milk is sold, offered for sale, or held with intent to sell shall keep all tags from containers on file for not less than 60 days, and they shall be exhibited when demanded by an inspector from the health bureau.

SEC. 21. All places where milk or cream is kept, stored, pasteurized, bottled, or transferred from one container to another shall be clean, well lighted and ventilated, and have all openings screened against flies, and must be free from objectionable odors; shall have hard, smooth side walls impervious to water for a height of at least 5 feet, and shall be painted with a light-colored paint. The floors shall be of concrete or other impervious material, sloped to a drain which shall be properly trapped and connected with a sewer. There shall be two rooms completely divided by a partition. One room, in which containers and utensils are washed and sterilized, shall be provided with a sufficient supply of hot and cold water, vats in which to wash milk containers and utensils, and steam for sterilizing bottles or other containers. The other room shall be used exclusively for storing, transferring, bottling, and pasteurizing milk. It shall be provided with a sufficient supply of hot and cold water, adequate means for refrigeration, a milk bottling and capping apparatus, and, if pasteurizing be done, a pasteurizing apparatus approved by the health bureau. The apparatus used must not occupy more than 50 per cent of the available floor space. The pasteurizing apparatus

shall be of a type approved by the health bureau, shall be susceptible of being readily cleaned, be capable of raising the entire charge quickly to a temperature of 145° F., and of holding it at this temperature for at least 30 minutes; shall have an accurate temperature-recording apparatus, and the charts for any run of milk shall be retained for at least seven days and these charts shall be open to inspection by an inspector from the health bureau at any time in that interval.

SEC. 22. No person, firm, or corporation shall sell, offer for sale, hold or have in his possession with intent to sell milk or cream from cows which are kept or stabled within the limits of Jersey City.

SEC. 23. All premises, wagons, cars, or other vehicles in which milk or cream is sold, offered for sale, transported, or delivered in Jersey City, all containers, utensils, refrigerating, bottling, or pasteurizing apparatus used in the sale of milk or cream and any milk or cream offered for sale, held, or had in possession with intent to sell shall at all times be freely open to inspection when required by any authorized inspector from the health bureau, and it shall be unlawful to in any way interfere with or obstruct such inspector.

SEC. 24. All milk intended for sale in Jersey City shall be promptly removed from any railway car, platform, wharf, or dock where such milk may be landed in Jersey City, and no milk cans, bottles, or other containers shall be allowed to stand upon the sidewalk in front of the store or other place where such milk is to be held or sold.

SEC. 25. The health superintendent of Jersey City shall have authority to compel any person, firm, or corporation selling, offering for sale, holding or having in their possession with intent to sell any milk or cream in this city to remove any condition or thing which is likely to render such milk unwholesome or objectionable for human consumption.

General considerations governing the quality of milk sold or offered for sale in Jersey City:

SEC. 26. All milk sold or offered for sale in this city must conform to the statutory requirements of New Jersey at present in force or which shall hereafter be enacted governing the composition and purity of milk and cream and to the ordinances of this city. It must contain not less than 3 per cent of butter fat, not less than 11.5 per cent of total solids, nor less than 8.5 per cent of solids not fat, and not more than 88.5 per cent of water.

SEC. 27. All milk or cream sold or offered for sale in this city shall at all times before delivery to the consumer be held at a temperature of 50° F. or below; it shall not be taken from cows within 15 days before nor within five days after parturition. It shall be free from slime, visible dirt, objectionable odors, or preservatives, and must have no substances added to or taken from it: *Provided, however,* That modified milk for infants, condensed milk, or skimmed milk may be sold as such under the restrictions hereinafter provided. All milk or cream shall be free from pathogenic bacteria and the presence of colon bacteria shall necessitate the pasteurization of all milk from the source from which such sample was derived.

SEC. 28. Milk or cream which is subjected to pasteurization shall be raised to a temperature of 145° F. and held at this point for at least 30 minutes and then quickly cooled to 50° F. or below. No milk shall be pasteurized more than once. The grade of any milk shall be fixed by the score of the dairy having the lowest score from which milk in any given supply is derived. All milk sold in Jersey City shall be sold either as certified milk, grade A milk or grade B milk, condensed milk or skimmed milk, and cream as cream of the corresponding grade as the milk from which it was taken. Buttermilk, koumiss, matzoon, zoolak, and similar varieties of fermented milk must be produced from a sound, wholesome grade of sweet milk.

SEC. 29. Certified milk shall be milk which conforms to all the requirements of the act of the Legislature of the State of New Jersey, entitled "An act providing for the incorporation of medical milk commissions, and the certification of milk produced

under their supervision and regulating the sale of milk as certified milk," approved April 22, 1909.

Grade A milk or cream may be raw or pasteurized.

Grade A milk may be modified for infants' use by the addition of barley water, lime water, or similar substance.

Grade B milk or cream must be pasteurized.

SEC. 30. Grade A milk shall come from cattle which on physical examination show no evidence of disease and which have been tested for tuberculosis within one year, and from dairies which score not less than 75 per cent (25 per cent for equipment and 50 per cent for methods) by the score card known as the U. S. Government Score Card. It shall not contain more than 75,000 bacteria per cubic centimeter when drawn, and if pasteurized shall not have more than 25,000 per cubic centimeter after pasteurization before delivery to consumer.

No cattle from which it is drawn shall have been fed upon brewer's grains, distillery waste, or any other fermented or unwholesome food, and they shall have access to an uncontaminated supply of drinking water.

The milk shall be removed immediately when drawn to a milk house, without pouring, and there cooled to a temperature of 50° F. or below.

If bottled the cap of the bottle shall be marked in plain black letters grade A, with the day of bottling and the owner and location of the creamery where bottled, unless the milk be pasteurized, in which case it shall bear the word "pasteurized," and in addition the day and interval when pasteurization was done. It shall be delivered within 36 hours of the time it was drawn.

SEC. 31. Grade B milk shall be from cattle which show no evidence on inspection of open tuberculosis or other disease. It shall be from dairies scoring not less than 50 per cent on the U. S. Government Score Card, of which score not less than 30 per cent shall be for methods. It shall be pasteurized and shall contain not more than 500,000 bacteria per cubic centimeter before pasteurization and not more than 30,000 per cubic centimeter when delivered to the consumer, none of which shall be pathogenic in character. It shall be delivered to the consumer within 36 hours of the time it was drawn.

SEC. 32. Skimmed milk shall be milk from which all or part of the butter fat has been removed. It shall conform in other respects to not less than the requirements of grade B milk, and containers shall have tag attached having the words "skimmed milk" stamped thereon in letters not less than 1 inch in height, and shall be sold in containers having a capacity of not less than 20 quarts.

Condensed milk shall be milk from which all or part of the water has been driven off by evaporation. In other respects its minimum requirements shall be those of grade B milk.

SEC. 33. All cream kept, sold, or offered for sale in Jersey City shall be taken from milk conforming to at least the minimum requirements of grade B milk, and if from milk having requirements lower than grade A raw milk shall be pasteurized.

No cream sold as such shall have less than 18 per cent of butter fat, and if it have less than 30 per cent of butter fat it shall be sold as "light" cream. Cream having 30 per cent of butter fat, but less than 40 per cent, may be sold as "heavy" cream, and cream having above 40 per cent of butter fat may be sold as "extra heavy" cream.

SEC. 34. (a) Any person, firm, or corporation violating the provisions of sections 1, 2, 3, 5, 8, 11, 14, 15, 16, 17, 18, 19, 20, 21, 22, 24, or 25 shall be subjected to a fine of not less than \$10 nor more than \$50.

(b) Any person, firm, or corporation violating the provisions of section 23 of this ordinance shall be subjected to a fine of not less than \$100 nor more than \$200.

(c) Any person, firm, or corporation who shall violate the provisions of sections 26, 27, 28, 30, 31, 32, or 33 shall be subjected to a fine of not less than \$25 and not more than \$50.

Provided, however, That in any such case it shall be the duty of the health bureau of the city of Jersey City within 48 hours after making an inspection which shall disclose a violation of sections 26, 27, 28, 30, 31, or 32 of this ordinance, to cause to be mailed to the person, firm, or corporation charged with such violation a notice stating the nature of the violation, and that, therefore, such person, firm, or corporation is guilty of a violation of this ordinance and stating the liability incurred thereby. In case the person, firm, or corporation charged with such violation has not previous thereto violated the provisions of the sections of this ordinance with which such person, firm, or corporation is now charged, and shall within 14 days after the mailing of the said above-mentioned notice pay to the superintendent of the health bureau of Jersey City, for the use of the municipality, a penalty of \$15 (and such payment shall constitute a first conviction for violation of said sections of this ordinance), no action for the recovery of a penalty shall be commenced against such person, firm, or corporation for said violation.

And it is further provided, That the provisions of section 31 of this ordinance regulating the pasteurization of all grade B milk shall not take effect or become operative until six months after the date of the passage of this ordinance.

ROCK ISLAND, ILL.

Milk and Cream—Production, Care, and Sale. (Ord. Apr. 26, 1915.)

SECTION 1. That the ordinance entitled "Milk and cream inspection" be amended in the following manner:

Milk and food division established.—There is hereby established a division of the department of health of the city of Rock Island, to be known and designated as the "Milk and food division," which shall embrace the commissioner of health and such other inspectors and employees as the council may by ordinance prescribe and establish.

SEC. 2. *Officer's defaults.*—Any officer or employee of the health department who willfully connives at or assists in the violation of any of the provisions of this ordinance shall, on conviction thereof, be fined not less than \$100 nor more than \$200 and at once forfeit his office.

SEC. 3. *Insignia of office—Powers.*—The health commissioner and the inspectors shall each, when on duty, wear a metallic star, inscribed with suitable words, which shall be supplied by and be the property of the city. They shall each have the power, on demand made thereof, to require the aid, assistance, or presence of any police officer in the performance of any duty enjoined by the provisions of this ordinance, to arrest all persons found violating any of the terms or provisions of this ordinance, and shall have full powers, as are now provided by the laws and ordinances of the city.

SEC. 4. *Milk vendor's license—License fees.*—No person or persons, firm, or corporation, or driver of any milk wagon thereof, shall sell or offer for sale, expose for sale, dispose of, exchange or deliver, or, with the intent so to do as aforesaid, have in his or their possession, care, or custody or control, milk or cream for human food without having first been licensed so to do. Every person or persons, firm, or corporation selling or disposing of milk or cream at retail shall annually, on the 1st day of May, pay license fees as follows: Every milk or cream vendor selling, offering for sale, exposing for sale, exchange, or delivery, or disposing of the same in or from any store, stand, booth, market place, milk depot, warehouse, dairy, cow stable, or any building or establishment of any kind, or in or from any wagon, carriage, or other vehicle shall pay the sum of \$5: *Provided,* The above fee shall not apply to grocers and meat dealers who receive or are supplied from dairymen who have already paid the license fee. Persons who own more than two cows and who sell milk therefrom to their neighbors or customers by peddling the same by hand shall be subject to inspection and all the

regulations of this ordinance, but shall be compelled to pay a fee of but \$1 per year for registration. When more than one wagon, carriage, or vehicle is used from which milk or cream is sold or offered for sale, there shall be paid at the same time and in like manner, as hereinbefore provided, for each such additional wagon, carriage, or other vehicle the sum of \$5. All licenses granted pursuant to this ordinance shall be issued by the commissioner of public health and safety, and he shall have the right and authority to suspend at any time such licenses for flagrant violation of the provisions hereto and for any other good and sufficient cause. In case the person whose license is suspended desires to appeal to the city council, he shall have that privilege. The council shall have the right to revoke such license or renew the license to the person aggrieved.

Sec. 5. License—Application and issue of.—License shall be issued in the names of the applicants therefor. Before the issuance of the license every vender of milk or cream shall make written application therefor on a printed form provided for that purpose, on which shall be stated:

First. The name, residence, and location of the business place or places of the applicant.

Second. The number of cows, if any, owned by or controlled by the applicant.

Third. The number and description of each and every wagon, carriage, or other vehicle used by the applicant in the milk or cream business.

Fourth. If, after the issuance of and delivery of the license, any change be made in the location of the place of business of such licensee, notice thereof must forthwith be given to the city clerk. Any and all persons licensed under this article shall immediately cause to be and remain posted his or their license upon some conspicuous part of the room or office in which the business is carried on, under a penalty of not less than \$10 for each day said license remains unposted as provided in this section.

Sec. 6. Vehicles, premises, etc.—Cleanliness.—All utensils, mechanical milkers, or other devices used in the production or handling of milk or cream must be properly cleaned and sterilized each time before using, and shall be so constructed so that all parts are absolutely free from places where milk can accumulate or soak in so that it can not be removed by simple washing, and the surface coming in contact with the milk or cream must be smooth and free from rust, and all refrigerators or stores or other places where milk or cream is kept, stored, or handled shall be kept in a scrupulously neat and clean condition and free from the presence or vicinity of any article likely to injuriously affect the quality or sweetness of milk or cream; and no person or corporation shall use any can, bottle, or other receptacle in which milk or cream has been delivered to such person or corporation for the purpose of handling or storing any other article, and persons having in their possession bottles, cans, or other receptacles used for the transportation or delivery of milk or cream shall cleanse or cause to be cleansed all such milk vessels immediately after emptying; but such vessels shall be sterilized by dairyman or dealer before being filled again.

All persons living upon premises where such milk is produced or employed thereon or engaged or employed in the handling of milk that is brought into the city of Rock Island or sold in the city of Rock Island for human food shall be free from contagious or infectious diseases and resident or domiciled in places free from such diseases, and shall not be exposed to or come in contact with a person suffering with or having a contagious disease: *Provided*, That no person shall be employed or permitted to work on such farm or to handle any such milk unless and until it shall have been demonstrated to the satisfaction of the commissioner of health of the city of Rock Island that such person is not a typhoid or diphtheria carrier.

It shall be the duty of every person, firm, or corporation producing milk or handling milk to notify the commissioner of health at once, by mail, of the occurrence of any sickness in any person or persons living or employed on their farms where such milk

is produced or employed by them in the handling of such milk. Milk, cream, skimmed milk, or buttermilk produced on any farm or bottled or handled where a case of contagious or infectious disease has occurred or is suspected to have occurred shall not be shipped into or delivered or sold or offered for sale in the city of Rock Island or to any creamery or bottling plant supplying the city of Rock Island until the commissioner of health shall be notified and shall have made an investigation and released such milk, cream, skimmed milk, or buttermilk for delivery in the city of Rock Island.

All cans, vessels, and receptacles used in the handling of milk and cream, as well as all packages, refrigerators, restaurants, hotels, compartments, or stores or other places where milk and cream are kept, stored, or handled, shall be kept and maintained scrupulously neat and clean, and shall be kept free from the presence or vicinity of any article of any kind likely to contaminate or injuriously affect the quality or sweetness of the milk or cream. All cans, bottles, vessels, and receptacles in which milk or cream is kept shall be sterilized with boiling water or live steam, each time they are used, and all pouring cans, dippers, or other vessels used in handling or peddling milk or cream shall be scalded or sterilized daily, and all bottles in which milk is distributed shall be washed clean and sterilized each time they are used. No person or persons shall bring to, or deliver milk in the city of, Rock Island for the purpose of retailing the same to customers in the city of Rock Island, in any open or uncovered wagon, cart, or conveyance of any kind, and all milk hereafter brought to the city of Rock Island to be retailed to consumers, or for that purpose, to be delivered in the city of Rock Island, shall be brought to said city and delivered in carts and wagons or cars so constructed that the covering hereinbefore provided shall not come in contact with the cans, bottles, or other vessels containing the milk, and shall protect such milk and the cans, bottles, or other vessels containing the same from the sun and the rain, and so far as practicable, from the dust and all impurities of the air.

No milk shall be sold by any dairyman from a milk wagon, after May 1, 1916, unless it shall be contained in glass bottles, which have stamped thereon the name of the owner thereof. Milk sold in large quantities and by wholesale may be delivered in suitable cans.

It shall be unlawful for any person, firm, or corporation, after one year from date of the passage of this ordinance, to sell milk in bottles which have not stamped thereon the name of the owner.

SEC. 7. *Vehicle sign.*—No milk or cream shall be sold, offered for sale, exposed for sale, exchanged, delivered, transported, conveyed, or carried on any wagon, carriage, or other vehicle unless the owner or owners thereof shall first obtain from the city clerk two metal plates on which shall be stamped the number corresponding to the license, together with the year for which the license is issued, which plates the said licensed owner or owners shall cause to be securely fastened on the outside of each side of the box of his vehicle so licensed, or in a conspicuous place so that the same can be easily seen.

SEC. 8. *Inspection—Resisting.*—It shall be the duty of the said health commissioner (either in person or by one or more of said inspectors) to visit, view, and inspect dairies and farms from which milk and cream are sold to be used in the city of Rock Island, and all places and vehicles in which milk and cream may be sold, offered for sale, exposed for sale, stored, kept, exchanged, delivered or disposed of as well as to inspect, view, and examine all vessels, cans, receptacles, packages, refrigerators, or compartments of store places or buildings, erections or establishments of any kind containing milk and cream, and ascertain or examine the condition thereof with reference to cleanliness and sanitation, and are authorized, directed, and empowered to cause the removal and abatement of any unfit, unclean, or injurious condition attending the keeping, storing, or possession, care, custody or control of milk or cream at and all places. Any person, firm, or corporation failing, neglecting, delaying, or refusing to obey or

conform to any reasonable order or direction under this section, made by the proper officer, shall be deemed to misdemeanor and fined not less than \$10, nor more than \$100.

SEC. 9. Powers of entry.—The commissioner of health, inspector, and police officer detailed, directed, or instructed to act therein shall have the right and it shall be their duty to enter and have full access, egress, and ingress to all places where milk or cream is stored or kept for sale, to all wagons, carriages, or other vehicles, railroad cars, or conveyances of any kind used for the conveyance, transportation, or delivery of milk to any warehouse, place of business, factories, buildings, farms, stables, railroad depots, erections, establishments, or places of any kind to all vessels, cans, packages, refrigerators, or receptacles of milk or cream, and to take samples of milk and cream therefrom, not exceeding 1 pint, for the purpose of inspecting, testing, or analyzing the same, and when demanded of the inspector one-half of the sample shall be returned to the person from whom the milk is taken, to be used in his own private test.

Any person, firm, or corporation failing, neglecting, delaying, or refusing to obey or conform to any reasonable order or direction under this section, made by the proper officer, shall be deemed guilty of a misdemeanor and fined not less than \$10 nor more than \$100, and whenever a sample or samples so found and taken as aforesaid shall not correspond with or shall be in violation of the requirements of this ordinance the person or persons, firm, or corporation in whose possession, care, custody or control such milk or cream may be found, shall be deemed guilty of a misdemeanor and fined not less than \$10 nor more than \$100 for each and every offense.

SEC. 10. Samples—Test.—All samples of milk and cream taken or brought to the office of the department of health by the officers thereof shall be analyzed or otherwise tested and wherever or whenever said milk or cream or condensed milk so tested or analyzed shall be found in violation of the provisions of this ordinance the necessary steps shall be taken for prosecution for a violation thereof. The analysis or test herein required may be made with such instruments, apparatus, chemicals, or other articles and to such extent as may be by the commissioner of health be deemed necessary. A record shall be kept of every analysis or examination that may be made, and the health commissioner shall make an annual report of the transactions of this division to the council with all such data as may be of public interest.

SEC. 11. Milk test.—No milk shall be kept, sold, or offered for sale, stored, exchanged, transported, conveyed, carried, or delivered, or with such intent as aforesaid, be in the care, custody, control, or possession of anyone if it contains more than 88 per cent of watery fluids or less than 12 per cent of total solids, of which total solids 3 per cent shall be butter fat.

SEC. 12. Cream test.—No cream shall be sold, offered for sale, exchanged, delivered, or be transported or carried for the purpose of sale, exchange, or delivery that contains less than 18 per cent of butter fat or that is taken from any impure, diseased, unhealthy, unclean, adulterated, or unwholesome milk or cream to which any foreign or other substances of any kind has been added. Offenders under this section shall be deemed guilty of a misdemeanor and on conviction thereof shall be fined not less than \$10 nor more than \$100 for each and every offense.

SEC. 13. Skimmed milk—Penalty.—Any vendor of milk or cream or any driver, servant, or agent of such vendor, who shall in the city of Rock Island sell or offer for sale any milk from which the cream or any part thereof shall have been taken, shall offer for sale and sell the same as skimmed milk and not otherwise, and no vendor of milk, and no driver, servant, or agent of such vendor shall offer for sale or sell or have in his custody, possession, or control, with intent to sell or deliver same, any such milk from which the cream or any part thereof shall have been taken, unless the can, vessel, or package containing such milk shall have conspicuously attached thereto a steel or metallic tab on which shall be engrossed the words "skimmed milk" in large, plain, distinct letters; said steel or metallic tab shall not be less than 3 inches by 5

inches in size, and when the same is sold in bottles the words "skimmed milk" should be marked on the cap.

SEC. 14. *Impure, diluted, or adulterated milk.*—Whoever, by himself, or by his servant or agent, employee or milk-wagon driver, or as servant or agent, employee or milk-wagon driver for any other person, firm, or corporation, sells, offers for sale, exchanges, delivers, or transports or carries for the purpose of sale, exchange, or delivery, or has in his custody, possession, care, or control with intent so to sell, offer for sale, exchange, or deliver, or exposes or offers for sale, exchange, transportation, or delivery any milk or cream for human food which is unclean, diluted, impure, unhealthy, diseased, unwholesome, adulterated, or not of the standard of quality provided for by this ordinance, or milk or cream to which water or any foreign substance has been added, or milk or cream produced from cows kept in an unclean, filthy, or unhealthy condition, or milk or cream that has been exposed to or contaminated or affected by the emanations, discharges, or exhalation from any human beings or animals sick with any contagious or infectious diseases by which the health or life of any person may be endangered, compromised, or in any way affected, shall be deemed guilty of a misdemeanor, and on conviction thereof shall for a first offense be fined not less than \$10 nor more than \$100; and for each subsequent offense be fined not less than \$25 nor more than \$200.

SEC. 15. *Adulteration or dilution.*—Any person who shall adulterate milk or cream or reduce or change it in any respect by the addition of water or any foreign or other substance or by the removal of cream therefrom with a view of selling or offering the same for sale or exchange shall be deemed guilty of a misdemeanor, and on conviction thereof be fined not less than \$10 nor more than \$100 for each and every offense.

SEC. 16. *Foreign substances contained.*—Any person, firm, or corporation who shall sell, offer for sale, expose for sale, exchange, deliver, dispose of or transport, convey or carry, or with any such intent as aforesaid, have in his or their possession, care, custody, or control, any milk or cream having therein or containing any foreign or other substance of any kind whatever, or coloring matter, or any adulteration or preservative, whether for the purpose of artificially increasing the quantity of milk or cream or for preserving the condition of sweetness thereof, or for any purpose whatever, shall be deemed guilty of a misdemeanor, and on conviction thereof shall be fined not less than \$10 for each and every offense.

SEC. 17. *Condensed milk.*—No person shall manufacture, sell, or offer for sale any condensed or evaporated milk for domestic use, unless the same shall be put up in packages or cans upon which shall be distinctly labeled or stamped the name or brand by whom or under which the same is made. No condensed or evaporated milk shall be made, sold, or offered for sale, exchanged or delivered for domestic use, unless the same is manufactured from pure, clean, healthy, fresh, unadulterated, wholesome milk from which the cream has not been removed. Condensed or evaporated milk shall contain not less than 20 per cent of milk solids and 100 per cent of such milk solids shall contain not less than 27.5 per cent of milk fat. Nothing herein contained shall be construed to prevent the addition of cane sugar in the manufacture of condensed or evaporated milk.

SEC. 18. *Confiscation of impure milk.*—All milk and cream from sick and diseased cows, or cows fed on refuse or slops from distilleries, vinegar factories, or any similar slops, mash, or refuse shall upon discovery thereof be confiscated, forfeited, and immediately destroyed by or under the direction of the commissioner of health or superintendent who shall, if done in good faith, be held harmless in damages therefor in any suit or demand made.

SEC. 19. *Buttermilk.*—Nothing in this ordinance shall be so construed as to prohibit the use or sale of what is known as buttermilk, provided the same is produced from pure and wholesome milk. Should any such buttermilk, however, be sold, kept, offered, or exposed for sale, exchanged, or transported, conveyed, or carried or be in

the care, custody, control, or possession of anyone, with the intent as aforesaid, which is not the product of pure and wholesome milk, the offender shall be deemed guilty of a misdemeanor, and, on conviction thereof, shall be fined not less than \$25 nor more than \$100 for each and every offense.

SEC. 20. *Hotel keeper, restaurant, etc.*—Every hotel keeper, restaurant keeper, or boarding-house keeper who furnishes milk or cream to his or their guests or boarders shall be in all respects subject and amenable to the provisions of this ordinance, saving and excepting the obtaining of a license, and it shall be his duty to place over the container of milk the words, which shall truthfully describe the contents thereof in the words, "cream, milk, or skimmed milk."

SEC. 21. *Sick or diseased cow—Slaughter.*—If any cow be sick or diseased, the owner or person in charge thereof shall not sell, or offer for sale, exchange, or delivery, the milk or cream therefrom, but shall at once destroy the same. If, in the opinion of the commissioner of health or any inspector, any cow is afflicted with a contagious or infectious disease, he shall direct the owner or person in charge thereof to forthwith remove the said cow from the premises to a place where it may not spread or cause contagion or infection. A violation of this section shall be deemed a misdemeanor, and, on conviction thereof, the offender shall be fined not less than \$10 nor more than \$100. If said cow is by the commissioner of health or inspector deemed incurable, and the owner or person in charge thereof does not consent to its being killed, said commissioner shall notify the State board of live stock commissioners.

SEC. 22. *Parturition of cow.*—No milk or cream shall be sold, kept, offered, or exposed for sale, stored, transported, exchanged, carried, delivered, or in any manner disposed of, drawn from cows within 15 days before and 5 days after parturition, nor shall the same be mixed with any other milk or cream for such purposes. Anyone so offending shall be deemed guilty of a misdemeanor and, on conviction thereof, shall be fined not less than \$10 nor more than \$100 for each and every offense.

SEC. 23. *Dairy, refuse matter, offal.*—All persons, firms, or corporations who own or keep a dairy and offer the products thereof for sale in the city of Rock Island, shall maintain the premises thereof free from any accumulation of refuse matter or offal, which shall be removed frequently, so as not to endanger the public health.

SEC. 24. *Moneys collected.*—All moneys collected under the provisions of this ordinance shall be duly paid to the city clerk.

SEC. 25. It shall be unlawful for a milk dealer to purchase any milk bottle from a junk dealer or other person engaged in the business of collecting bottles, which may have been contaminated by disease and filth.

SEC. 26. When milk is delivered to premises quarantined by the health authorities, it shall be unlawful for milk dealers to receive empty bottles therefrom, excepting after the same have been sterilized, under the direction of the health officer, who fumigates the premises upon the lifting of the quarantine.

SEC. 27. Dairymen who wish to put a milk of exceptional excellence on the market may be allowed to use the words "certified milk" on their labels, provided that they shall comply in every respect with the "certified milk" requirements.

SEC. 28. All milk sold as pasteurized milk shall at all times prove to be such, and dealers purporting to sell pasteurized milk shall be suspended from business should their milk be proven not to be pasteurized.

SEC. 29. Milk may be pasteurized in the following manner:

A uniform heat for 145° for 25 minutes.

A uniform heat for 150° for 20 minutes.

A uniform heat for 155° for 15 minutes.

A uniform heat for 160° for 10 minutes.

A uniform heat for 165° for 5 minutes.

A uniform heat for 170°. Flash.

SEC. 30. This ordinance shall not go into effect before 60 days after its passage, at the end of which time no milk shall be sold within the limits of the city of Rock Island which has not come from a farm or dairy which has been examined by the inspector and found to score more than 50 per cent. A permit shall be necessary regardless of the number of cows kept by the person selling milk.

The board of health shall have the power and authority to make such further rules and regulations as shall appear to be necessary from time to time.

Any violation of this ordinance shall subject the offender to the forfeiture of this dairy license, in addition to such other and further penalties herein provided.

Grades of milk.—The following standards are hereby established as to the relative merits to proper conditions of milk:

Fifty per cent passable.

Seventy per cent good.

Ninety per cent excellent.

One hundred per cent perfect.

Bacteria test.—All milk and skim milk brought into the city or sold or offered for sale in the city, must not contain more than 250,000 bacteria per cubic centimeter from May 1 to October 1, and 150,000 from October 1 to May 1.